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BIRDS FROM NEPAL, 1947-1949

BY

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(*With a map, 1 coloured and 2 black & white plates*)

Since the days of Brian Hodgson, that indefatigable worker on so many facets of natural history in the Himalayas, Nepal has been a sort of 'terra incognita'. The Central Valley containing the capital, Katmandu, and the routes leading up to it from the Indian plains, have been the only areas visited by naturalists, as they have been the only areas visited by foreigners, outside of the occasional invited big game shoots arranged by the Nepal rulers in the lowlands of the Terai. Aside from Sir Joseph Hooker's brief botanical explorations along the Tamur River in 1848, and one or two recent geological treks in eastern Nepal, no zoologists have been allowed to travel or study in Nepal, except in the Valley area, within a radius of fifteen miles of the capital, and the trail up. Until recently the best paper on the Valley was that of Surgeon J. Scully who was in attendance at the British Residency for two years and published a list of 300 species of birds from Nepal in *Stray Feathers* in 1879. Herbert Stevens visited the Sikkim Himalayas in 1911, '12 and '14, and crossed over into eastern Nepal for a short distance. His extensive collections were written up and published in the *Journal of the Bombay Natural History Society* in 1923-24. In 1920 and 1921 a small collection of birds was secured at the same time as the collection of mammals for the Mammal Survey of India was made by the Bombay Natural History Society's collector, Mr. N. A. Baptista, under the supervision of Colonel R. L. Kennion who was then British Resident. A comprehensive if conjectural list of the birds of Nepal was prepared by S. H. Prater for inclusion in Volume I of the book, 'Nepal' by Percival Landon, published by Constable and Co., London, 1928. Colonel F. M. Bailey, who was Minister in Nepal in the early nineteen-twenties, made a collection of birds which is at present being studied by Mr. N. B. Kinnear at the British Museum. More recently (in 1947) two collections have been made about the Valley and the trail leading to it by Dr. Walter Koelz, whose specimens are on deposit in New York and currently being studied by a number of students, and Mr. B. Biswas of the Indian

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Museum. In the summer of 1949 Mr. R. L. Fleming of Mussoorie collected some 600 specimens in the western Nepal districts of Palpa, and No. 4 West on the upper Pokhara-Mustang trail, and a party of British mountaineers, using one of our collectors, took a few specimens for the British Museum on the trail up to Gosainthan.

There are two valuable recent papers in the Bombay Natural History Society's journal of sight observations of Nepal birds, the first by B. E. Smythies, son of the well-known forest official of Nepal, and co-author of 'Birds of Burma', of birds observed during a walk along the pilgrim trail to Gosainkund (1948). The second is by Mrs. Proud, wife of the First Secretary of the British Embassy at Katmandu, on birds observed in the Valley (1949).

The collection reported on herewith is believed to be the most comprehensive made since Hodgson's time. The specimens collected number close to sixteen hundred, representing three hundred and thirty-one species and subspecies taken, with an additional fifty forms positively observed, making a total of three hundred and eighty-one. Of these, ten species and subspecies have not previously been recorded from Nepal. In addition eight subspecies have been previously described as new (1950).

COLLECTING LOCALITIES AND DATES

For convenience's sake I will divide the collecting localities into three groups: Central, West and East. The winter dates from November to February are in 1948-49, the April-May dates in 1947.

(A) *Localities in the Central area.*

Raxaul-Birganj. The border area of Nepal is totally indistinguishable in its general conditions from neighboring areas of Bihar. Open cultivation devoid of trees except for occasional mangos and groves of bamboo. Altitude 350 ft. above sea level. November 17-20.

Simra. A village about fifteen miles farther north-north-east in the Terai on the edge of the evergreen forest belt. Altitude 450 ft. November 18.

Sisagarhi. The height above Bhimpedi, sometimes called Chisapani Garhi where the first Rest House of the foot trail is located. On the southern slopes of the first Pass of the Mahabharat Range in light scrub, mixed with grass and pines. Altitude 5,000 ft. December 7, May 3.

Bhimpedi. A village at the head of the motor road and below the first pass on the Katmandu trail. Some evergreen tucked away in small ravines. The open areas are either cultivation, however, or mixed light scrub, grass and pine. Altitude 4,000 ft. May 3-5.

Kulikhani. A village in the Markhu Valley enroute to Katmandu. Open cultivation along an upper branch of the Bagmati River. Altitude 4,750 ft. November 22, December 6.

Chandragiri Pass. The last Pass before descending into the Central Valley of Nepal, the Valley of the capital, Katmandu, hereafter called the Valley. This Pass is well-clothed with evergreen,

mixed oaks and rhododendrons and is one of the remaining forested areas within reach of Katmandu itself. Altitude 7,500 ft. November 22, December 6, April 17; May 3.

Naggerjung Hill. A hill about two miles northwest of Katmandu, called variously Nagarjong, Nagerjun, etc. The upper slopes are well forested, as the area is a Preserve, but constant cutting nevertheless still goes on. The biotope is mixed deciduous-evergreen, with pines (*P. longifolia*) on the S.E. slope. Altitude about 6,000 ft. November 25, April 12-20.

Godaveri. A spring about ten miles southeast of Katmandu where the ruling family have maintained another Preserve. The village lies in the shadow of Phulehok, one of the highest surrounding hills of the Valley, well clothed in evergreen forest. Our collecting was done from 5,500-6,500 ft. Spelt variously Godavari, Godavery, etc. November 26-28, April 25-29.

Pharping. An open cultivated area in the Valley about seven miles south of the capital at a point where the Bagmati River emerges through the surrounding hills. Altitude 4,200 ft. December 1-4.

Thimi. A village of pottery makers surrounded by open cultivation and small ponds and swamps five miles east of Katmandu. Altitude 4,500 ft. December 4.

Gokarna. A Preserve of the Rana family situated in the Valley about four miles to the east of Katmandu. Thick mixed deciduous and evergreen forest in a patch of about fifty acres surrounded by a wall. Altitude 4,700 ft. April 22-24.

Chitlang and Chisapani are two villages on the south side of Chandragiri Pass. The localities have mixed evergreen forest stretching up the hill-side, interspersed with patches of grazed-over scrub. Altitude 6,000-6,500 ft. April 17-May 1.

(B) Localities in western Nepal.

Kauriala Ghat is the railhead for the Oudh Tirhut Railway in Kheri District, U.P., fronting on the Nepal border at the Kauriala River bank, a tributary of the Karnali. The area is grazing land with patches of heavy second growth deciduous scrub. Altitude 400 ft. December 10, 11.

Tikapur, twelve miles north along the bank of the Kauriala River is a hamlet of the Tharu people on the edge of the Terai belt of deciduous forest. In addition to the heavy deciduous forest biotope, there was a light scrub forest consisting of *Acacia catechu*, and numerous bushes, characteristically *Zizyphus*, and tall grasses. This scrub occurred on the banks of the rivers and on small islands in the bed of the stream. It proved to be a favoured habitat of a number of warblers and babblers, and a few miles north, of the Scaly-bellied Woodpecker. Altitude 500 ft. December 12, January 5-10.

Belchola, a camping place on the bank of the Kauriala about six miles north of Tikapur, deep in the forest which by now had assumed a number of evergreen components. Altitude 600 ft. December 14, January 4.

Chisapani. A small group of huts at the gorge where the Karnali River emerges from the Siwaliks. Heavy forest, mixed evergreen and deciduous, with a fringe of the light acacia and thorny scrub growth along the river banks. Altitude 900 ft. The southern limit of many wintering montane birds. December 16-22, January 4.

Kune Ghat, Jammu Ghat, Guttu, Solta, Kachail were all hamlets in the 'duns' the flat interior valley behind the Siwalik ridge and south of the Mahabharat hills. The area was relatively untouched, although lumbering operations have begun under lease to an Indian firm. Here were giant primeval stands of the largest forest trees, *Shorea*, *Dalbergia*, *Eugenia*, *Bombax*, etc. The Karnali receives its principal tributary the Bheri River here. Altitude 1,000-2,000 ft. December 22-24, January 2-4.

Rekcha. A village where our party camped for nearly ten days. It is on the ridge of the Malka Danda, the first range to the north of the 'duns'. Cultivation was very heavy along these ridges and also to the north so that we camped here and made the best of what we could find in the way of the sparse evergreen forest patches available, mostly oaks and rhododendrons. The scrub and grassland remnants with open pine stands were combed for *Ophrysia*, but without success. Altitude 5,000 ft. December 25-January 2.

(c) *Localities in eastern Nepal.*

Biratnagar. The Nepal industrial town a mile north of Jogbani, the Oudh Tirhut Railway terminal facing the Nepal border in Bihar. The surrounding countryside is entirely under cultivation except for a few acres of woodland two miles northwest of the town. This stand is being cut daily. Altitude 250 ft. January 17-19.

Dharan Bazaar, the winter camp of the Governor of Dhankuta District is at the foot of the first range of the Mahabharat Lekh, just north of the six-mile wide band of Terai forest remaining in east Nepal. Conditions for hunting here range from open grazed land and scrub, to fairly heavy evergreen and deciduous forest south of the town. Altitude 1,000 ft. January 21-23, February 15-17.

Muhlghat, a village on the Tamur River, one of the seven Kosi feeders, in the 'duns'. Open scrub. Altitude 1,000 ft. January 24, February 14.

Dhankuta. The Provincial capital is surrounded by open cultivation and very little forest except a patch of pines north of the town. Altitude 4,000 ft. January 25.

Sindua, Chitré and Dur are hamlets along the main ridge, sometimes called the Patek Danda running northeast-southwest north of Dhankuta. Forest is not reached until an altitude of about 7,000 ft. when it begins sparsely, mostly the relics of old rhododendron groves, which gradually become thicker and more solid. Altitude 6,500-8,500 ft. January 26-29.

Tinjuré, Mangalbaré and Umling were place names only, lacking inhabitants, on the further northeastward extension of the main ridge



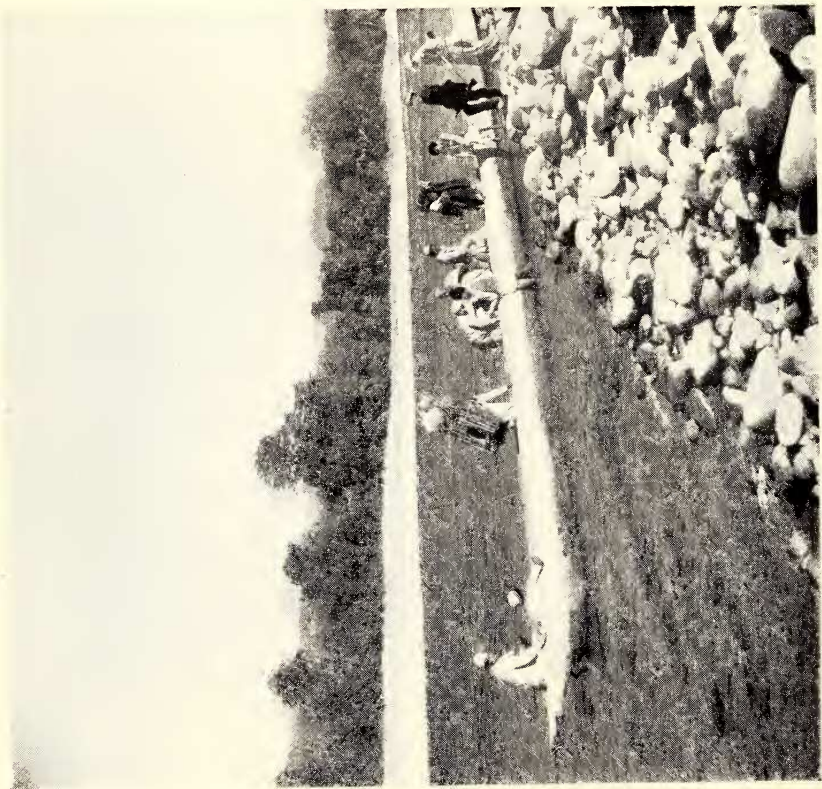
View of Mt. Kanchenjunga from the Southwest, taken from the ridge of the Tinjure Danda at Mangalbare showing the slopes of the hills covered with rhododendron forest. The lower slopes at about 7,500 ft. are the upper limit of cultivation, traces of which may just be made out in the clearings below the trees. Phalut appears at the extreme right of the picture.



Courtesy

National Geographic Magazine

Typical forest remnants and scrub vegetation at Rekcha (5,000 ft.) in western Nepal. The trees are mostly oaks. The outer ridge in the background is the Siwalik Range, which here reaches a height of 5,500 ft.



Courtesy

Crossing the Bheri River in west Nepal at Janu Ghat. The forest across the river was untouched and consisted of magnificent timber trees, *Shorea*, *Dalbergia* etc., a haunt of *Avastriopsis*.



National Geographic Magazine

Near Chisapani in the west Nepal Terai. In the foreground, the beginning of a sandy island usually covered with *Acacia* and *Zizyphus*, the haunt of numerous wintering warblers and babblers.

north and east of Dhankuta, called the Tinjuré Danda. Thick rhododendron forest was interspersed with open patches of Alpine-type meadow land. On the tops of the ridge were the beginnings of silver fir (*Abies*) and yew, and groves of slim montane bamboo species. Altitude 8,100-9,400 ft. January 29-February 7.

Muhlkarkar, Mahdi, Birta and Chainpur were hamlets along the trail to the northeast down to the Arun Kosi River. Open cultivation with occasional patches of scrub and pines. No forest. Altitude 3,500-6,000 ft. February 8-10.

Along the valley of the Arun Kosi in the 'duns', a few birds were collected at localities known as Richavas and Mangma. Open cultivation with occasional patches of bushes. Altitude 1,150-2,500 ft. February 11-12.

Chatra, a village on the east side of the gap where the main Kosi River emerges from the hills into the Terai. An excellent collecting locality, for the Terai forest is here very thick and relatively undisturbed. Primary mixed evergreen and deciduous forest. Altitude 500 ft. February 17-21.

SPECIATION ALONG THE HIMALAYAN AXIS IN NEPAL

One of the problems which we set out to attempt to elucidate in this collection was the determination of the relationships of the fauna with the principal breaks in the east-west mountain axis. It is interesting to tabulate some of the data which we obtained. Listing the species which are residents along the south face of the Himalayan chain, I find that we have collected specimens of 143 such resident typically Himalayan species (I exclude from this grouping forms found all over the Indian plains and into the Peninsula, and Palaearctic forms).

Himalayan axis species collected ...	...	...	143
Of the above, most contained one subspecies throughout Nepal ...	...	...	111*
Species with two subspecies in Nepal, a western and an eastern subspecies ...	...	...	21
(a) Species in which the western subspecies occurs in Valley ...	...	...	14
(b) Species in which the eastern subspecies occurs in Valley ...	...	...	4
(c) Species with one subspecies in Nepal and a clinal or intermediate form in the western part of the country ...	...	...	1
(d) Species with two subspecies in Nepal and a clinal or intermediate form in the western part of the country ...	...	...	1
(e) Species with two subspecies and a clinal or intermediate form in the eastern part of the country ...	...	...	1
			<hr/> 21

* The additional 11 forms not included here are local endemisms or those with continuous clines which do not break into subspecies.

From the above it becomes apparent that a clear two thirds or 67% of the endemic Himalayan axis forms collected in which two subspecies occur in the country, have a division between the forms in the eastern half of Nepal. This is certainly a significant amount beyond any doubt.

Correlated with the above is the fact that the following species taken by us are presumably found only in extreme eastern Nepal:

Malacocincla sepiaria abbotti
Macronus gularis rubricapilla
Paradoxornis poliotis humei
Muscicapa sapphira
Muscicapa (olivaceus) poliogenys
Parus rubidiventris beavani
Certhia familiaris mandelli? (see text)
Certhia nipalensis?
Anthreptes singalensis assamensis

The above forms have been collected only east of the Arun Kosi River. So have all the eastern subspecies of Himalayan species taken by us in Nepal. What has served then as an extrinsic barrier to promote speciation east and west of this zone? Geographically the area is a continuous sweep of hills, wooded to the same extent. Studying the recent geology of the Himalayas is no great help. The rivers in themselves are apparently rather recent and so not barriers as they may be in other parts of the world. In a recent study of speciation in the Mishmi Hills of eastern Assam with Sálím Ali (1948), we came to the conclusion that the Brahmaputra River is not a great barrier, being too recent a feature, presumably, in contrast to its non-Himalayan feeder the Lohit. What other barriers then exist, if not geographical ones, in the neighborhood of the Kosi River valley, the apparent locus of the division between eastern and western Himalayan bird species?

In the whole sweep of the Himalayan range through Nepal there is only one easily perceptible and presumably significant climatological change and that is the isohyet which passes through the 87th parallel. East of 87° E. long. the annual rainfall is about 75 inches per year. West of this isohyet the annual rainfall is reduced to 50 inches per year. I should say, therefore, that from the above evidence, the most distinctive 'break' in the distribution of the avifauna from east to west in Nepal occurs in the valley of the Arun Kosi River which runs nearly north and south very slightly to the east of the 87th parallel.

A second interesting correlation climatically with speciation in the Nepal area is the fact that at the 80th parallel or slightly to the west of it, there is a decided change in the annual temperature range, although the annual rainfall of 50 inches per year remains the same. The Himalayan zone to the east of 80° E. as far as 87° E. receives the major portion of the annual rainfall in the Monsoon but an effective amount also falls from December to May. Winter in the lowlands and foothills is cold (60-70° F.). The daily range of temperature is large except during the Monsoon (more than 25° F.). Relative humidity is high during Monsoon and winter (more than 65%), but less in other periods.

West of 80° E. (that is to say, west of the Nepal-Kumaon border), the annual rainfall occurs almost wholly in the Monsoon season. It

is very cold in winter (less than 60° F.). The daily range of temperature is moderately large (20-25° F.). Relative humidity is high only during the Monsoon. The plains do not become hot quite as early. It is perhaps significant that a number of forms seem to be confined to this area from 80°-87° as follows:

- Megalaima zeylanica rana* (western Nepal only)
- Pomatorhinus erythrogenys ferrugilatus* (central and west Nepal)
- Acanthoptila nipalensis* (west Nepal)
- Garrulax striatus vibex* (central and west Nepal)
- Garrulax rufogularis grosvenori* (west Nepal)
- Heterophasia capistrata nigriceps* (central and west Nepal as far as Kumaon)
- Phylloscopus pulcher eriochroa* (central Nepal)
- Phylloscopus maculipennis centralis* (central Nepal)
- Certhia himalaya infima* (west Nepal)

Of the above eight subspecies, five differ from their nearest relatives by color alone, being in every case paler than more eastern populations, and if relatives exist to the west darker than these western forms. In the same way, those three races that differ in size, are larger than the populations to the east, and smaller than those to the west. *Acanthoptila*, the Spiny Babbler, alone has no close relatives, being apparently a relict form intermediate between the genera *Turdoides* and *Garrulax*.

In addition to these populations to which names may be ascribed on the basis of color or size differences, there are five species in which intermediates occur between two recognised sub-species in western Nepal, three species in which intermediate populations occur between recognised sub-species in eastern Nepal, and one intermediate population in central Nepal between two recognised sub-species found on either side. Thus there are a total of nine populations in which a continuous cline of color or size prevents the clear demarcation of the population into sub-species. All vary as above, being darker or smaller or both as specimens are examined farther to the east at any point in the cline.

Thus the external evidences of speciation examined all follow Gloger's rule, indicating an adaptive significance in the possession of darker color in more humid areas. In this connection it is worth pointing out another rule that seems to apply in Continental areas, if not on islands: that is that birds from more humid areas tend to be smaller than birds from drier areas.

From the above evidence I would hazard the opinion that the climatic influences in the Nepal area of the Himalayas have been more effective in promoting speciation than have any specific geographical or other extrinsic barriers. Of course the very fact that the zone in which these forms live is a narrow one, a long rectangular strip along the south face of the Himalayas, is in itself a sort of barrier, tending to reduce gene flow. But given this continuous strip, it would appear that the avian populations have developed a certain definite tolerance for conditions as found within these climatic micro-zones.

In this connection it is worth noting that the climatic changes mentioned above do not occur in a straight north-south line, all areas to the east of such a line having climate *a*, all areas to the west,

climate *b*. Any line demarcating climatic change along the Himalayas, just as any isohyet, bends, so that it runs roughly in a northwest-southeast direction. In our collecting in western Nepal we were able to observe that the distribution of subspecies follows this general pattern in an accurate way. Thus *Megalaima zeylanica caniceps*, *M. z. rana*, and *M. z. hodgsoni*, apparently replace each other diagonally following such a northwest-southeast line. The race *caniceps*, found in the mountains in the west in the colder area, appears only in the west Nepal Terai, while *rana* replaces it in the west Nepal hills. Then by the time one reaches central Nepal, *hodgsoni* is the race of the hills, but, moving farther east again to east Nepal, *hodgsoni* has disappeared from the hills and is found only in the Terai, and has become a lowland bird. In somewhat the same way *Certhia himalayana infima* and *Sitta castanea cinnamoventris* are able to winter in the forest belt of the Terai in western Nepal, whereas apparently farther to the west they must winter much higher in the foothills.

Aside from the natural climatic conditions, it will be most interesting to observe in future what effect the tremendous progressive deforestation will have on the avifauna and the mammalian fauna of Nepal. The lowland forest in the Terai is now reduced to a continuous belt ranging from six to ten miles wide along the northern limit of the Terai. This area will probably be somewhat preserved in future although much of the primary tree growth has already been lumbered. It is the main big game hunting ground of the ruling family. Farther north in the 'duns', the interior valleys, lumbering is proceeding at a rapid rate, and only along the Karnali did we find any virgin timber left. From 1,000 ft. up to over 7,000 ft. throughout the country, intensive agriculture of a shifting nature is practised. The slopes are normally so steep that in many places only one or two crops can be secured from the newly cleared land before the monsoon run-off has carried away the topsoil. Thus vast areas become merely barren slopes of rock shale and gravel and avalanches are common. We found as a result that in many places mid-montane zone birds either did not exist, or could occasionally be glimpsed scurrying from bush to bush as if their lives depended on it, which possibly they did. It seems inevitable that jungle-haunting birds at this elevation will eventually become extinct over large areas. It will be interesting to note this progress, as it may well represent the creation of new artificial geographical barriers with long range climatic and speciation effects.

ACKNOWLEDGMENTS

I must express my deep gratitude to the authorities of the National Geographic Society who have allowed me to use photographic and other material for this paper, and who, along with the Smithsonian Institution and Yale University, supported our second longer trip to Nepal. The help rendered by these three Societies made our Expedition possible. To the Bombay Natural History Society my thanks are owed for many favors, not least of which was the recruiting for us of two skinners, Tony Mattos and John D'Souza. Finally my especial thanks are due to the two rulers of Nepal during my visits, Their Highnesses Maharajah Padma Shamsher J. B. Rana, and

Maharajah and Supreme Commander-in-Chief Mohun Shamsher J. B. Rana, for the many kindnesses they extended to our party, and for their willingness to allow us to explore parts of their country. To them and to the many officials who served them and assisted us on numerous occasions I am most grateful, and I hope that this paper will be a small tribute to their sponsorship of zoological research.

LIST OF THE BIRDS

COLYMBIDAE

Podiceps ruficollis: Little Grebe.

The Little Grebe was seen occasionally on some of the small ponds in the lower Terai near the Indian border.

PHALACROCORACIDAE

Phalacrocorax carbo: Large Cormorant.

Adults and immature birds were seen flying up the Karnali River in the 'duns' the inner valleys, in early January.

ANHINGIDAE

Anhinga rufa: Indian Darter.

Common in small ponds in the Terai.

ARDEIDAE

The Gray Heron (*Ardea cinerea*) and the Purple Heron (*Ardea purpurea*) were seen along the rivers in the Terai. The little Green Heron (*Butorides striatus*) was seen but not collected on the Kosi River in the 'duns'.

Ardeola grayii (Sykes): Indian Pond Heron.

A single male in sub-adult plumage, but entering breeding condition was collected April 19 at Gokarna. Soft parts: iris yellow; ocular skin yellowish-green; bill, upper mandible black, lower greenish-yellow; legs greenish-yellow. The species was common at all altitudes up to 5,000 feet.

Egretta garzetta garzetta (Linnaeus): Little Egret.

A female in breeding condition was taken at Thankote in April. Soft parts: iris gray with veins of purple; ocular skin bluish-purple; bill black, base of upper mandible bluish-purple, lower mandible with a small basal area of bluish-purple; legs black, feet orange-yellow.

The Large Egret (*Egretta alba*) and the Intermediate Egret (*Egretta intermedia*) were both seen in the Terai, but not higher.

Bubulcus ibis coromandus (Boddaert): Cattle Egret.

The commonest egret in Nepal, this species was seen from the Terai up to 5,000 ft., particularly in the Central Valley.

CICONIIDAE

The Open-bill (*Anastomus oscitans*), the White-necked Stork (*Ciconia episcopus*), the Black-necked Stork (*Xenorhynchus asiaticus*) and the Adjutant (*Leptoptilos dubius*) were all seen in the Terai in all areas where bodies of water occurred in open country, but none of the species were common or plentiful.

THRESKIORNITHIDAE

Pseudibis papillosa (Temminck) : Black Ibis.

A male was shot out of a wheeling flock at Tikapur, the only time the species was seen. Wing, 380 mm. Soft parts: iris brownish-yellow; crown and nape wattles coral red; face black; bill pale grayish-brown; legs pinkish-coral.

ANATIDAE

The Bar-headed Goose (*Anser indicus*) was seen on the Karnali River near the Indian border in mid-December. The Whistling Teal, presumably the Lesser (*Dendrocygna javanica*), was common locally at Chatra on the Kosi River in February.

Tadorna ferruginea : Ruddy Sheldrake.

The Brahminy Duck was seen in considerable flocks on the Karnali in the Terai during December and January, and on the streams of the Central Valley as late as April.

Migratory river duck of several species were seen in the Central Valley from November to April and locally on the big rivers in east and west Nepal. These consisted of the Pintail (*Anas acuta*), in the Central Valley only, Green-wing Teal (*Anas crecca*), Gadwall (*A. strepera*) both in the Central Valley and on the Kosi River, and Widgeon (*A. penelope*) and Garganey (*A. querquedula*) on Commanding General Kaiser Shamsher J. B. Rana's pond at Katmandu.

Of the pochards, the Red-crested Pochard (*Netta rufina*), the Common Pochard (*Aythya ferina*) and the Tufted Duck (*Aythya fuligula*) were all seen around the Central Valley in ponds and on the rivers.

Mergus merganser : Goosander.

Common along the Karnali at Chisapani and in the 'duns'. The females had arrived in December. Adult males were not seen until January 6th.

ACCIPITRIDAE

Elanus caeruleus vociferus (Latham) : Black-winged Kite.

This pretty and ubiquitous species was common in the Terai along the forest edges. A male from Tikapur was coming into breeding condition in January.

Milvus migrans lineatus (J. E. Gray) : Black-eared Kite.

A breeding and a non-breeding male were collected at Thankote and Naggerjung in April, and a non-breeding bird at Rekcha. They measure: wing ♂ 464, 472, 478 mm.

***Accipiter nisus melanoschistus* Hume** : Indian Sparrow Hawk.

A female with a wing measurement of 254 was shot at Tinjure February 4th. The bird was attacking a large hill barbet when secured. Soft parts; iris orange-yellow; bill black, cere greenish-yellow; legs yellow.

***Accipiter badius dussumieri* (Temminck)** : Indian Shikra.

Most hawks of the *Accipiter* group seemed rare in Nepal. A male Shikra was taken in a clump of trees near Biratnagar, the last clump in the vicinity of that rapidly expanding town. Soft parts: iris red; eyelid and cere yellow; bill black, basally gray; legs dull orange-yellow. Wing 186.5.

***Accipiter trivirgatus indicus* (Hodgson)** : Northern Indian Goshawk.

An adult female taken by us at Chatra February 17th, appears to be the first specimen of this Goshawk collected since the typical series by Hodgson's collectors. Measurements: wing 260; tail 203; tail index (length of tail in percent of wing length) 78; wing tip index 23.8. In size this specimen compares well with the measurements given by Mayr (1949), for the race. Soft parts: iris orange-yellow; bill black, cere yellow; legs yellow. The specimen was taken in thick forest.

***Buteo hemilasius* Temminck & Schlegel** : Upland Buzzard.

While out shooting Rock Pigeons near Thimi in the Central Valley in December, a female Buzzard landed on a pile of pigeon feathers just after I had picked up the dead bird in an open field. Apparently the bird saw the pigeon fall to the ground and missed seeing me pick it up. In its actions and looks the Buzzard resembled a young, uneducated eagle.

***Butastur teesa* (Franklin)** : White-eyed Buzzard-eagle.

A single male was taken near Dhankuta at 4,000 ft. in open country. Wing 283.

***Hieraaëtus pennatus* (Gmelin)** : Booted Eagle.

A female with a wing measurement of 397 was shot out of a large tree at Tikapur.

Ictinaëtus malayensis : Black Eagle.

The Black Eagle was seen at 5,000 ft. in west Nepal, one of a number of the larger birds of prey that were seen but flew out of reach of the collectors.

***Haliaeetus leucoryphus* (Pallas)** : Pallas's Fishing Eagle.

A female, one of a pair of these rather common and unsuspicious birds was taken at Tikapur in December. These birds are prominent because of their presence atop some giant silk-cotton tree and their harsh grating monotonous call. Wing 612, tail 300, tarsus 104, culmen (from cere) 51. Soft parts: iris dirty yellow, mottled with brown.

***Pseudogyps bengalensis* (Gmelin)** : White-backed Vulture.

This species was common in the Valley, especially near the rivers. A non-breeding young male was taken at Gokarna in April. Wing

590. The other species seen in the Valley was the Long-billed Vulture (*Gyps indicus*) but no specimens were secured. The Bearded Vulture (*Gypaëtus barbatus*) was seen on the ridge above Dhankuta at 6,500 ft. in early February, but our attempts to collect these birds resulted in a rattling noise as our shot-gun pellets struck their wing quills. There was no sign of the shots taking effect on the soaring birds.

Circus macrurus (S. G. Gmelin): Pale Harrier.

A male was collected at Dharan Bazaar. The Pied Harrier (*melanoleucus*) was seen in the central Nepal Terai in November.

Spilornis cheela cheela (Latham); Crested Serpent-eagle.

A male was taken on Naggerjung in April. Wing 495. Soft parts: iris yellow with brown mottling; bill basally gray, distally black, cere yellow; ocular skin whitish-yellow; legs light yellow.

PANDIONIDAE

Pandion haliaëtus haliaëtus (Linnaeus): Osprey.

A single female was seen and secured at Tikapur. Ospreys were also seen on the Kosi at Chatra.

FALCONIDAE

Microhierax caerulescens caerulescens (Linnaeus): Himalayan Red-legged Falconet.

The Falconet is a jungle bird, found by us near Dharan Bazaar and at Chatra. One bird was sitting near a hole in a twenty-foot dead tree, possibly a nesting site. Wing ♂ 101, 0 (= ♀) 111. Soft parts: iris brown; bill basally yellowish-green, distally black; legs blackish-slate.

Falco tinnunculus interstinctus McClelland: Himalayan Kestrel.

The commonest hawk in Nepal, seen from the Terai up to 5,500 ft., in open country. Soft parts: iris brown; cere and ocular area yellow; bill yellowish-slaty, black tip; legs orange-yellow. Wing ♂ 236-264; ♀ 243-255.

PHASIANIDAE

Francolinus francolinus: Black Partridge.

Common in the Terai and up through open areas in the 'duns', the Black Partridge has even invaded the Central Valley, probably recently since the great increase in cultivation. Not collected by us, but its characteristic syncopated whistle heard principally in the western and central Terai.

Francolinus pondicerianus interpositus Hartert: Northern Gray Partridge.

A female was taken at Kauriala Ghat, December 11.

Arborophila rufogularis rufogularis (Blyth): Rufous-throated Hill Partridge.

This was the only partridge secured at Rekeha, a place where we hoped in vain to find the Mountain Quail (*Ophrysia*), the 'sano kalo

titra' of the Nepalese. Trappers went out locally in Dailekh District for us, looking for the latter species to report later that they could only secure this common Hill Partridge.

The Hill Partridge is deceptive to the naked eye. In the open it looks big when it flies, almost as big as a hen kaleej, but in thickets it appears as small as a quail. These birds were mostly secured in thick secondary scrub composed of *Strobilanthes*, *Quercus* seedlings, *Randia* and other thorny plants. Their calls were heard at Godaveri in April but none were secured. The birds were not calling at Rekcha in December. Wing ♂ 141; ♀ 126, 137. Soft parts: iris brown; ocular skin pinkish red; bill dark brown; legs dull coral red.

Tragopan satyra : Satyr Tragopan.

Near Mangalbaré we found a small heap of feathers belonging to a cock bird of this species, evidently killed by a fox or carnivore. These birds have been so much shot and trapped by the local people that they have now retreated above 10,000 ft. in east Nepal. The Impeyan Pheasant (*Lophophorus*) was not met with by us although it was supposed to occur near Mangalbaré. Birds are sometimes brought down from above Katmandu by trappers. Above Rekcha we were told that the Cheer Pheasant (*Catreus*) occurs although we did not get up high enough to enter its range.

Lophura leucomelana leucomelana (Latham) : Nepal Kaleej.

Several kaleej were taken in the Central Valley, and the species was seen briefly in both eastern and western Nepal, although not collected. Wing ♂ 226, 236; ♀ 198-210. There is considerable variation in the color of the females although the pale edgings to the feathers are constant. Birds were breeding in April. In the Central Valley the kaleej is found in all the wooded preserves, particularly round Godaveri. Their alarm calls are often heard there in the thick scrub and they come out to feed in early morning on the trails. I saw two cock kaleej fighting at Chisapani in mid-December, but was unable to secure one. In western and eastern Nepal the species seemed uncommon.

Gallus gallus murghi Robinson & Kloss : Red Junglefowl.

The junglefowl was very common in the Terai where it seemed partial to the scrub at the forest edges, particularly the prickly 'jhaveri' or 'jherberi' (*Zizyphus*) bushes with their haw-like fruits. From west to east there is a cline in coloration of the neck hackles of the males collected by us, those from east Nepal being more orangey at the tip, more like *spadiceus*, with a reduced wattle also. This cline evidently culminates in northeastern Assam where Sálím Ali and I collected the Burmese race, *spadiceus* (1948). The same holds true for the females which become considerably darker in tone of general coloration from west to east, particularly in Assam. Soft parts: iris pale brown; wattles (♂) pink, pale whitish spot on ear; bill dark brown; legs blackish-brown.

TURNICIDAE

Turnix suscitator plumbipes (Hodgson): Himalayan Bustard-Quail.

The Bustard-Quail was found by us only at Dharan Bazaar. A pair (the female had not quite attained the adult black throat), measure: wing ♂ 87, ♀ 92.5, and agree in color with Assam birds.

GRUIDAE

Grus grus: Common Crane.

The Common Crane was seen at Kauriala Ghat on the river, where it flew up and down in a morning and evening flight. The Sarus Crane (*G. antigone*) also occurred in the vicinity. The Demoiselle Crane (*Anthropoides*) is found regularly as a migrant in the Central Valley in mid winter and again in early spring.

CHARADRIIDAE

Lobivanellus indicus indicus (Boddaert): Red-wattled Lapwing.

Common along streams in open cultivated areas in the Terai. Wing ♂ 217, 231.5; ♀ 215-22.

SCOLOPACIDAE

Tringa erythropus, *T. nebularia*, *T. ochrophus*, and *Actitis hypoleucos* were all common on the flats along the Karnali and Kosi Rivers from December through February.

Capella gallinago gallinago (Linnaeus): Fantail Snipe.

This species, along with the Pintail (*C. stenura*) and the Jack Snipe (*Lymnocyptes minima*) is found in the Central Valley in winter. Mr. Roy Kilbourne of Katmandu reported the Fantail to be the commonest of the three, but the numbers of all are severely reduced, according to Mr. Kilbourne's records of twenty years ago. The Wood Snipe (*C. nemoricola*) is found singly in the wooded swamps around the edges of the Valley, and Mr. Kilbourne has shot one or two each year.

Scolopax rusticola rusticola Linnaeus: Woodcock.

The Woodcock is not now very common in the wooded foothills about the Central Valley where it was common not long ago, according to Mr. Kilbourne. A pair were observed by us in a small swampy depression at Mangalbaré in January, and the male was caught later in one of my bird nets.

RECURVIROSTRIDAE

Ibidorhyncha struthersii: Ibis-bill.

A flock occupied the shallows near the rapids of the Kosi at Chatra while we camped there in February.

BURHINIDAE

Burhinus oedicnemus indicus (Salvadori): Indian Stone-Plover.

Stone-Plover were in pairs running about on the sandy banks of the Karnali and its tributary the Kauriala River in the lower Terai. Soft parts: iris yellow; eyelid and base of bill yellow; remainder of bill black; legs greenish-yellow.

GLAREOLIDAE

Glareola lactea: Small Indian Pratincole.

Seen but not collected on the Kosi River near Chatra in February.

LARIDAE

Sterna aurantia Gray: Indian River Tern.

The River Tern was common on the big rivers in the Terai. Soft parts: iris brown; bill rich orange-yellow; legs light coral red. This, the Black-bellied (*melanogaster*), and the little Ternlet (*albifrons*) were all seen on the Karnali and the Kosi.

COLUMBIDAE

Sphenurus sphenurus sphenurus (Vigors): Wedge-tailed Green Pigeon.

Seen at fairly high altitudes in central and eastern Nepal. Collected on the Chandragiri Pass and at Mangalbaré in rhododendron forest. Soft parts: iris orange; bill greenish-blue; legs cherry red.

Treron phoenicoptera phoenicoptera Latham: Bengal Green Pigeon.

A pair were taken at Tikapur where this species was fairly common in the trees which were covered with a heavy growth of vines, apparently fruiting. Wing ♂ 190, ♀ 183. Soft parts: iris orange-red, inner blue ring; bill greenish-gray; legs yellow.

Columba livia intermedia Strickland: Indian Blue Rock Pigeon.

Common in the Central Valley around paddyfields. Birds were breeding in April. Many live half wild about the houses of the smaller towns like Thimi and Thankote. Soft parts: iris reddish-yellow; ocular skin light gray; bill and cere grayish-black, posterior half of cere dirty white; legs dark red.

Columba hodgsonii Vigors: Speckled Wood-pigeon.

Two females were taken out of a small flock at Godaveri, April 25, 1947. This species was seen also at the Chandragiri Pass in May, but not met with elsewhere in Nepal at other seasons. Like so many pigeons, it is apparently a great wanderer, and may occur at any altitude above 5,000 ft. at any time. Soft parts: iris grayish-white; ocular skin gray; bill, basally purple, distally black; legs brownish-yellow, nails yellow. Wing (worn) 236, 237.

Columba pulchricollis Hodgson: Ashy Wood-pigeon.

This beautiful pigeon was not uncommon in the Valley at Gokarna and other heavily wooded preserves; but was difficult to observe as it sits very inconspicuously indeed in the high trees. A breeding male

was taken at Gokarna in April. At Mangalbaré the species was common, and a subadult female was collected February 3rd. This bird is dark gray above, paler on the head, with blackish tail, with pale ecru-drab on the throat and pale cinnamon on the belly and under tail coverts. The breast is gray with a small amount of iridescence, and the abdomen gray with cinnamon tips to the feathers. Wing ♂ 211.5, 216, ♀ 215, (subad.) 183. Soft parts: iris white, grayish-white, whitish; ocular skin gray; bill (breeding ♂) basally grayish-purple, distally grayish-green, (non-breeding ♂ and ♀) cherry-red, greenish tip, (subadult) bluish-white; legs (breeding ♂) fleshy purple. (non-breeding ♂ and ♀) pinkish red, (subadult) pale pink.

Macropygia unchall tusalia (Hodgson): Bar-tailed Cuckoo-dove.

The big Himalayan Cuckoo-dove is a rather difficult bird to collect and doubly difficult to skin due to its habit of losing a good part of its skin and feathers on its way down from a tall tree. We found it only near Mangalbaré from 8,500 ft. up, although I saw it flying near the Chandragiri Pass. Soft parts: iris pink (once brown); bill black; legs dull cherry-red. Wing ♂♂ 196-209.

Streptopelia orientalis meena (Sykes): Rufous Turtle-dove.

Breeding males were collected about the Central Valley in forested areas in April. Their unusual, rather growling calls were heard in light secondary scrub, and cut-over forest. These specimens belong to the western form. Soft parts: iris orange, ocular skin reddish-purple; bill horn, cere grayish-purple; legs reddish-purple. Wing ♂♂ 189-192.

Streptopelia orientalis agricola (Tickell): Eastern Rufous Turtle-dove.

Breeding birds and young of this race were taken at all altitudes in eastern Nepal from 1,000 to 8,500 ft. in January and February. Wing ♂ 181-189, ♀ 179-181. Soft parts: iris orange; bill basally purplish, distally horn; legs dull purplish-red. Immature birds were as follows: iris orange, eyelids purple; bill brownish-black, (older) purplish-gray; legs grayish-purple, (older) purple.

Streptopelia decaocto decaocto (Frivaldszky): Ring Dove.

Common in the Terai in cultivated areas. A male taken at Birganj in November was in breeding condition.

Streptopelia chinensis suratensis (Gmelin): Indian Spotted Dove.

Common from the Terai up to the Central Valley. Breeding birds were shot in January, March, April and December. Soft parts: iris pinkish-red, eyelids pinkish; bill black; legs dull cherry. Wing ♂ 137-144, ♀ 140, 143.

Chalcophaps indica indica (Linnaeus): Emerald Dove.

This little familiar ground dove was common in the Terai and the forests of the 'duns'. A subadult female was taken in January, a female coming into breeding condition in February. Soft parts: iris brown; bill (♂) coral red, (♀) basally purple, distally pink, (im. ♀) purplish-brown; legs (♂) purplish-red, (♀) purple, (im. ♀) grayish-purple; nails brown.

PSITTACIDAE

Psittacula eupatria nipalensis (Hodgson): Large Indian Parakeet.

Two females were taken in the west Nepal Terai have wing measurements of 203, 212. Soft parts: iris yellowish-white; bill red; legs gray. This species seems to be local, confined to fairly heavy forest, or in proximity to heavy forest, and a wanderer in search of suitable fruiting trees.

Psittacula krameri borealis Neumann: Eastern Rose-ringed Parakeet.

All the specimens of this parakeet collected in the Nepal Terai have the lower mandible red, brownish-red, purplish, or, in one case a female taken at Birganj, brownish-black. On this evidence the birds would seem to be *borealis*. In any case they are all large, wing ♂ 170-177. Birds were breeding in January and February in east Nepal. We found it common in the Terai in light forest.

Psittacula cyanocephala cyanocephala (Linnaeus): Blossom-headed Parakeet.

A male was taken in the Terai at Dharan Bazaar. Wing 143. Seen up to 6,000 ft.

Psittacula himalayana himalayana (Lesson): Slaty-headed Parakeet.

Peters (1937) points out that *himalayana* (Lesson) replaces *schisticeps* Hodgson.

Two specimens were shot out of a single flock seen at Rekcha December 27. The species was not otherwise observed. Soft parts: iris white; bill, upper mandible basally cherry, tip creamy yellow, lower mandible yellow; legs light greenish-gray.

CUCULIDAE

Cuculus varius Vahl: Common Hawk-cuckoo.

An immature male was taken at Birganj in November.

Cuculus micropterus micropterus Gould: Indian Cuckoo.

Indian Cuckoos were calling in the trees in wooded area in the Central Valley in late April, but the two males collected by us were not in breeding condition. Wing 190, 191. Soft parts: iris light brown, eyelids yellow; bill, upper mandible black, lower basally yellow, distally gray; legs yellow.

Cuculus poliocephalus poliocephalus Latham: Small Cuckoo.

I shot a single female in a gorge on Naggerjung in mid-April. The rectrices were in moult. Wing 171. Soft parts: iris white with a brown ring; bill, upper mandible black, lower greenish-gray; legs yellow.

Surniculus lugubris dicruroides (Hodgson): Indian Drongo-cuckoo.

Common in wooded places in the Central Valley. A breeding male, hawking for insects like the Ashy or Bronzed Drongo, was taken on the trail above Bhimpedi on May 3. Wing ♂ 140.5-147.5.

Eudynamis scolopacea scolopacea (Linnaeus): Koel.

A breeding male was collected April 12 at Naggerjung, and a heavily moulting male at Gokarna in late April. Wing ♂ 189 (worn), 202.

Rhopodytes tristis tristis (Lesson): Himalayan Green-billed Malkoha.

Seen at Bhimpedi, and collected at Chatra and up the Kosi and Tamur Rivers. Wing ♂ 169-176; tail ♂ 371 (Moult), 380, 383.5; white on second outermost rectrix 18-22. These measurements are slightly different from those given by Mayr (1938), notably in the shorter tail. These specimens and a few newly-collected birds from the Khasia Hills (wing 164-170) incline me to feel that *saliens* as a subspecies must depend on a smaller wing measurement alone as I can see no constant color differences. Mayr (l.c.p. 306) gives wing measurements for his *saliens* of 152-163.

Soft parts: iris dark brown; eyelid dark red; bill chartreuse green, legs dark greenish slate.

Taccocua leschenaulti infuscata Blyth: Hill Sirkeer Cuckoo.

Common in the western Terai in open country, often seen creeping along in overgrown fields or flying across a short stretch of open paddy. One bird scared one of our elephants by bursting out of the grass almost at its feet in the manner of a pheasant. Wing ♂ 164, ♀ 160. Soft parts: iris brown; bill cherry-red, tip yellow; legs grayish-blue.

STRIGIDAE

Otus asio (bakkamoena auct.): Collared Scops Owl.

Heard but not collected near Chatra in February.

Bubo zeylonensis leschenault (Temminck): Bengal Fishing Owl.

A rather diurnal species found by us in the Central Valley at Gokarna and in the western Terai. A male and female measure; wing ♂ 405, ♀ 389. Soft parts: iris dark yellow; bill greenish-gray, cere horn; legs light greenish-yellow, gray.

Glaucidium brodiei brodiei (Burton): Collared Pigmy Owlet.

Taken near Chandragiri Pass in March.

Glaucidium radiatum radiatum (Tickell): Jungle Owlet.

Found in the Terai right up to the foothills. Birds were coming into breeding condition as early as January 8, and were in full breeding condition in February. The species has a characteristic call, closely related to that of the Barred Owlet. Soft parts: iris yellow, eyelid greenish-yellow; bill greenish-yellow; legs yellowish-white, greenish-yellow. Wing 124-129.

Glaucidium cuculoides cuculoides (Vigors): Western Barred Owlet.

The Barred Owlet is possibly somewhat migratory in an altitudinal sense. We found it from the foothill edge of the Terai (January), up to 9,000 ft. The species seems to breed later than *radiatum*, and

thus may occur on the edges of the latter's territory at times. But at these times *cuculoides* itself is apparently not in breeding condition, and moves into the hills when it is coming into its breeding cycle in March and April, thus removing itself as a marginal ecological competitor with *radiatum*.

A bird from Birta in east Nepal is approaching *rufescens* (Ripley 1948 c) in size and color, but still lies within the range of *cuculoides*. Soft parts: iris yellow; bill greenish-yellow, greenish; legs yellowish green, greenish-yellow. Wing; 5 ♂♂ and ♀♀ 142-156 (ave. 150.8).

Nepal name, 'latakosera'.

***Ninox scutulata lugubris* (Tickell):** Indian Brown Hawk-owl.

A male taken at Tikapur measures; wing 217, tail 133, culmen (from cere) 12. Soft parts: iris yellow; cere green, bill white; legs yellow. The bird was hawking after insects at dusk along the river bank.

***Athene brama indica* (Franklin):** Northern Spotted Owlet.

The agitated screaming of these owlets was our first avian welcome in Nepal. They inhabit crevices in the Nepal Guest Houses at Raxaul and at Katmandu. A series from both places measure; wing ♂♂ and ♀♀ 152-166. Soft parts: iris yellow; bill yellowish-green, cere brownish-green; feet light brownish-green.

Strix ocellata, the Mottled Wood Owl was probably heard in the west Nepal Terai and in the foothills in eastern Nepal if my interpretation of its call is correct, a single note rather like that of the Spotted Deer or Chital. *Strix aluco*, the Himalayan Wood Owl was heard at Mangalbaré, a pleasant two-syllable note, 'who-whooo', but our efforts to locate it at night were unsuccessful.

CAPRIMULGIDAE

***Caprimulgus indicus hazarae* Whistler and Kinnear:** Himalayan Jungle Nightjar.

A single specimen of this nightjar was collected at Chatra on an open road near the river in February. The 'chuck-er chuck-er' call was heard both there and at Belchola in the western Terai. Soft parts: iris reddish-brown; bill blackish-horn; legs brown.

***Caprimulgus macrurus albonotatus* Tickell:** Horsfield's Nightjar.

Collected at Chatra where they sat commonly on the road at night-fall. These specimens belong to the dark, blackish phase and are males in breeding condition, on February 21. Wing: 207, 216. Soft parts: iris and feet brown; bill brown, tip black. At night the iris and of this species shines pinkish-red, whereas in our experience the eyes of the preceding form, *indicus*, reflect whitish in the light of a flashlight.

MICROPODIDAE

***Apus affinis nipalensis* (Hodgson):** Nepal House Swift.

Common round houses from the Terai up to the Central Valley. Breeding birds were collected in April and May. A nestling almost

ready to fly was taken out of one of the nests suspended below the eaves of the Government Rest House at Bhimpedi May 5th.

Hirund-apus caudacutus: White-throated Spinetail.

A flock of these large impressive swifts flew over our camp in the early morning on a ridge above Dhankuta at 6,000 ft. The species was not seen within collecting range again, thus proving that a bird collector must needs shave with shotgun in hand.

ALCEDINIDAE

Ceryle lugubris, the Himalayan Pied Kingfisher, was seen in the west Nepal Terai along the feeder streams of the Karnali, and **Ceryle rudis** the Indian Pied Kingfisher also was seen into the 'duns' along the big rivers in the west and east.

Alcedo atthis bengalensis Gmelin : Common Indian Kingfisher.

Found along the principal rivers at all seasons, the Common Indian Kingfisher was none too easy to collect as it normally frequented the open watercourses and perched well out in the centre of the streams on boulders.

Halcyon smyrnensis fusca Boddaert : White-breasted Kingfisher.

We found the White-breasted Kingfisher all the way from the Terai to the Valley where a male in breeding condition was collected on Naggerjung at 6,000 ft. in April. The behavior of this bird and its presumed mate, made me suspect that the pair was breeding high up on Naggerjung in a patch of sandy soil covered with *Pinus longifolia*, far from water, but I was unable to locate a nest in the various sandy banks.

MEROPIDAE

Merops orientalis orientalis Latham : Common Indian Bee-eater.

Specimens were collected at all seasons in the open-country Terai near the Indian border. *Merops leschenaulti* was also seen.

Nyctiornis athertoni athertoni (Jardine & Selby) : Blue-bearded Bee-eater.

A male from Chatra records our only encounter with the species. Wing 137. Soft parts: iris yellowish-green; bill basally gray, distally black; legs greenish-yellow.

CORACIIDAE

Coracias benghalensis benghalensis Linnaeus : Indian Roller.

Common from one end of the Terai to the other in open areas. Breeding specimens were taken in January and March. Western birds in our series are certainly paler in a continuous cline than topotypes from Bengal. In a zone to the east of Nepal, from Darjeeling south to the Calcutta area, hybrids between this race and *affinis* may be taken. I have seen such hybrids from the Sikkim Duars, Dacca and

Chandpara, a few miles east of Calcutta. In color these birds favor *benghalensis*, but are darker, lacking the chestnut nape ring, and on the back resembling *affinis*.

UPUPIDAE

Upupa epops epops Linnaeus: Hoopoe.

I prefer to use the typical name for the migrants which we found in the Terai in December and January. The species was rather common on open paddy and grazing land.

Upupa epops orientalis Baker: Northern Indian Hoopoe.

The resident Hoopoe in Nepal appears to be this race. I cannot agree with Whistler and Kinnear (1935 p. 28) that *orientalis* is not worthy of recognition. These birds are paler than Mysore specimens of *ceylonensis* although the measurements are about the same, wing up to 145, but darker and smaller than the typical race.

BUCEROTIDAE

Tockus birostris: Gray Hornbill.

Common in the Terai and 'duns' in large trees, often near villages and cultivation. A female was taken at Kauriala Ghat. None of the large hornbills were seen in Nepal much to our disappointment.

CAPITONIDAE

Megalaima virens marshallorum (Swinhoe): Great Himalayan Barbet.

Unfortunately no specimens of this Barbet were taken in western Nepal, although it was heard calling numerous times above Rekcha. Birds from the Central Valley belong to this race but are somewhat intermediate between it and the following subspecies both in color and size. Particularly is this so with one male which is smaller and brighter than the others in the series. Three males and two females were secured on Naggerjung. They measure: wing ♂ 141.5-148, ♀ 145, 146. In April these birds were coming into breeding condition.

Megalaima virens magnifica Baker: Assam Great Barbet.

Two males were collected at Tinjuré, which definitely belong to this eastern subspecies. They were shy, and the species was not easy to approach. One bird was being molested by an Indian Sparrow Hawk when secured. Wing: 145, 146.

Megalaima zeylanica caniceps (Franklin): Northern Green Barbet.

A female coming into breeding condition was taken at Tikapur on January 8. This bird is indistinguishable in size from South Indian examples, so that it seems unwise to recognise *kangrae* (Whistler and Kinnear). In their original description (l.c. 1934, p. 516), the authors give a convincing series of measurements indicating that *kangrae* is a well-marked size race, (wing 121.5-129.5 as against 112-117.5 for

S. Indian birds), but in the Hyderabad Survey (1934, p. 126) Whistler notes that intermediates from Hyderabad in his collection measure 121.5-125.5. A pair in my collection from Mysore measure: ♂ 121, ♀ 120. All these measurements indicate too much overlap to make the race tenable. This Nepal female has a wing measurement of 125. There is no plumage difference.

Megalaima zeylanica rana Ripley : Western Lineated Barbet.

As I have pointed out in the original description (1950), this Barbet is a member of the *lineata* subgroup within the species *zeylanica*, the subgroup characterized by having the space between the eye and the bill feathered. I collected this form, which is larger and darker than *hodgsoni*, in the 'duns' near Bajora in western Nepal where it had previously been unknown, while twenty miles to the south in the Terai proper, we found *caniceps*, one of the naked-checked forms. Thus, *rana*, is a foothill bird which replaces *caniceps*.

Megalaima zeylanica hodgsoni Bonaparte : Eastern Lineated Barbet.

In my description of *rana* (l.c., 1950, p. 101) I restricted the type locality of *hodgsoni* to Simra in the central Nepal Terai. In central Nepal this subspecies occurs as high as the Valley, but is more commonly a Terai bird, while it seems to be almost entirely a Terai species in eastern Nepal where it replaces *caniceps*, the Terai and lowland species of the western part of the country. Farther east again it is primarily a lowland bird in Sikkim and Assam.

Megalaima asiatica asiatica (Latham) : Blue-throated Barbet.

Birds were taken throughout Nepal from 950-6,000 ft. Breeding specimens were collected in March and April. Birds from the western part of the range seem to be very slightly larger in size, but are otherwise indistinguishable.

Megalaima haemacephala indica (Latham) : Crimson-breasted Barbet.

The little Coppersmith was taken at Katmandu and in eastern Nepal from the Terai up to almost 4,400 ft. Birds were breeding in March and April. This species was only seen in large fig and banyan trees near cultivation or settlement.

INDICATORIDAE

The open rock faces on the ridges above Dhankuta leading towards Mangalbaré were covered with the marks of old hives of wild bees, but no active hives were observed at the time we were in the area. Undoubtedly, however, it is a suitable place for the Honey Guide to occur, and local people spoke of such a bird being in the area during the monsoon season.

PICIDAE

Picumnus innominatus innominatus Burton : Eastern Himalayan Speckled Piculet.

The Piculet was found by us only in the Central Valley and at Bhimpedi, although I saw a single bird at Chisapani. However, fail-

ing to collect any I have been unable to determine the race of western Nepal. Birds were breeding in April-May. Wing ♂ 57, ♀ 59.

Picus xanthopygaeus (Gray and Gray) : Scaly-bellied Woodpecker.

A female of this species with a wing of 134.5 was taken at Chisapani in low scrub (*Acacia catechu*) on a sandy island below the gorge where the Karnali River emerges from the foothills. The bird was calling, a loud complaining single-syllable note.

Picus canus sanguiniceps Baker : Black-naped Woodpecker.

Four males and two females from western Nepal belong to this western form. The birds measure; wing ♂ 152-156, ♀ 153, 157. Soft parts: iris reddish-brown, red; bill blackish-gray, base of lower mandible gray; legs bluish-gray. These birds were taken from 950-2,000 ft., in the 'duns' primarily, in rather thick secondary forest, or in clearings in primary forest, where considerable tangles of sub-stage growth and low trees and vines had resulted from the opening in the higher trees.

Picus canus sanguiniceps \supset **gyldenstolpei**

In the Central Valley we found the Black-naped Woodpecker common in the forested areas at Godaveri, Naggerjung and Gokarna where its loud tapping and soft calls, at times not unlike the American Flicker (*Colaptes*) are very noticeable. These specimens have a tendency to the yellowish-golden wash which characterizes the eastern race and seem exactly intermediate. Wing ♂ 146-150, ♀ 150. One specimen, taken in April, is extremely worn with most of the greenish wash off the lower plumage, and the red crest very pale. Breeding males were taken in April also.

Picus canus gyldenstolpei Baker : Assam Black-naped Woodpecker.

Specimens of this eastern subspecies were secured on the Kosi drainage system from 500-3,500 ft. A pair measure: wing ♂ 144, ♀ 148.5. These birds are definitely smaller than *sanguiniceps*, in addition to being more yellowish-golden in color.

Picus flavinucha flavinucha Gould : Eastern Himalayan Greater Yellow-naped Woodpecker.

The Greater Yellow-naped Woodpecker was a conspicuous part of the scene in wooded areas in the Central Valley, particularly on Naggerjung where breeding birds were collected in April. The species was common also in the forest around Chatra and up into the 'duns' wherever there were any remnants of deciduous or evergreen woods left. Their squeaking calls were a feature of the foothill forest above Chatra, although the birds were not yet in breeding condition in February. Unfortunately these Yellow-naped Woodpeckers were seen in western Nepal in the area at the foot of the hills near Chisapani, but not collected.

Picus chlorolophus simlae Meinertzhagen : Western Himalayan Smaller Yellow-naped Woodpecker.

This is a poorly characterized race indeed. The difference in the color of the nuchal crest follows a continuous cline, and is almost indistinguishable at best. There is a size difference, and it might be as well to characterize this race by saying that specimens of it have a wing measurement of 140 and over. Within this race I would include birds from central Nepal, where we took specimens at Godavari and Gokarna. A male coming into breeding condition was collected April 22.

Picus chlorolophus chlorolophus Vieillot : Eastern Himalayan Smaller Yellow-naped Woodpecker.

Specimens of the eastern race were collected at Chatra. They measure; wing 132-133.5.

Dinopium benghalense benghalense (Linnaeus) : Golden-backed Woodpecker.

Common in wooded parts of the Terai.

Dinopium shorii shorii (Vigors) : Golden-backed Three-toed Woodpecker.

A bird of the large Terai forest. Found in the same localities as the Golden-backed, but it shows less tolerance for changing conditions, and seems to be more specifically adapted to primary forest, both deciduous and evergreen.

Mulleripicus pulverulentus mohun Ripley : Indian Great Slaty Woodpecker.

The Great Slaty Woodpecker seems to be a bird of 'sal' and evergreen forest in its primary condition. I have only found it in undisturbed areas which may account for its rarity. Like the Ivory-bill (*Campephilus*) in the New World, it may be a species whose existence is contingent on large stands of original forest, although from Baker's account (1927, p. 87), it sounds more tolerant of a variety of conditions. Soft parts: iris brown; bill, upper mandible dark horn, lower light horn, tip black. The forehead of our one specimen was glued with tree sap.

Dendrocopos darjellensis darjellensis (Blyth) : Darjeeling Pied Woodpecker.

A series was taken at Mangalbaré in tree-rhododendrons. The birds made a great variety of taps and occasional squeaking, woodpecker calls. Soft parts: iris reddish-brown; bill, upper mandible grayish-black, lower pearl-gray; legs dark greenish-gray. Wing ♂ 129-131, ♀ 124-132. This was the only woodpecker of the higher altitudes in east Nepal.

Dendrocopos cathparius cathparius (Blyth) : Himalayan Lesser Pied Woodpecker.

A single male taken at Chitlang in April is our only record for this species. Wing 105.5, tail 63, culmen 18.5.

Dendrocopos hyperythrus hyperythrus (Vigors): Rufous-bellied Woodpecker.

Rufous-bellied Woodpeckers were collected on the Chandragiri Pass and at Mangalbaré. Soft parts: iris reddish-brown; bill, upper mandible black, lower greenish-yellow; legs blackish-gray.

Dendrocopos auriceps (Vigors): Brown-fronted Pied Woodpecker.

Found in a characteristic biotope, open scrub oaks cut over, and mixed with low secondary growth. This is a fearless bird, observed nesting in a dead stub 20 ft. high on the main Katmandu trail beyond Sisagarhi in early May. Other specimens in breeding condition were collected in April. One male has a stained breast, the color blackish as if with fruit juice. Soft parts: iris brown; bill slaty-gray; legs greenish-gray. Taken from 5-6000 ft. Wing ♂ 114, 116-5, ♀ 105-109.

Dendrocopos macei macei (Vieillot): Fulvous-breasted Pied Woodpecker.

Birds were taken at all altitudes from the Terai to 5,300 ft. A male from Godaveri is coming into breeding condition in April. Soft parts: iris brown; bill, upper mandible black, lower gray; legs greenish-black.

Dendrocopos mahrattensis mahrattensis (Latham): Yellow-fronted Pied Woodpecker.

This lowland woodpecker was collected in the Terai in light forest. Soft parts: iris ♂ red, brown, ♀ brown; bill black-gray, black along the culmen; legs grayish-brown.

I have never felt that the race *aurocristatus* was worth separating, having examined a considerable series from all over India.

Dendrocopos canicapillus mitchellii (Malherbe): Nepal Pigmy Woodpecker.

The pigmy woodpecker was found from the Terai nearly to 5,000 ft. Males and females were in breeding condition at Chatra in late February, while a female taken at 4,700 ft. in April showed no sign of breeding. Baker (1934, p. 295) notes that April and May seem to be the breeding season in Kumaon. Soft parts: iris brown, whitish-brown; bill blackish, base of lower mandible gray; legs blackish-brown.

A series from Nepal measure: wing ♂ 83.5-86 (Kosi R.), 90, 91 (W. Nepal), ♀ 85-89. There seems to be a slight tendency to larger size in W. Nepal birds, as well as this western population having wider bands on the back, showing more white.

Dendrocopos moluccensis nanus (Vigor): Northern Indian Pigmy Woodpecker.

Three females of this tiny species were taken near Chisapani and Tikapur in the open acacia scrub near the rivers. They measure: wing 74.5-79. Soft parts: iris yellow, ocular area light purplish-red; bill blackish-gray; legs grayish-black.

Blythipicus pyrrhotis pyrrhotis (Hodgson): Red-eared Bay Woodpecker.

A single female making a peculiar loud *yarrup* was collected on a stump in thick second-growth at Godaveri. Soft parts: iris reddish-brown; bill greenish-yellow; legs black.

Chrysocolaptes lucidus sultaneus (Hodgson): Hodgson's Golden-backed Woodpecker.

The Golden-backed Woodpecker was met with in the original forest areas of the upper Terai and 'duns'. Hodgson (1837) originally described this fine woodpecker from Nepal. I hereby restrict the type locality to Simra, central Nepal, as the form of central and western Nepal is larger than that found in the east. A male and female from Chisapani and Solta measure: wing ♂ 181, ♀ 182.5, culmen ♂ 52.5, ♀ 50. These birds had a distinct high single note reminiscent of the American Pileated Woodpecker.

Chrysocolaptes lucidus guttacristatus (Tickell): Eastern Golden-backed Woodpecker.

The Golden-backed Woodpecker had begun to breed at Chatra in February. A male and female measure: wing ♂ 171, ♀ 171; culmen ♂ 49 ♀ 48. These birds agree in size with those from Bengal and Assam.

ALAUDIDAE

Alauda gulgula guttata Brooks: Kashmir Skylark.

This Skylark, which has previously been recorded from Nepal by Scully (op. cit. p. 367) with a question mark from Nawakot was found by us at Pharping in the Central Valley and at Rekcha in December. The birds were in small flocks in open paddy fields, and would fly up together, straight up to a certain height and then hurl all at once off horizontally in one direction, like a dust devil flung into the air and then picked up by the breeze. These were winter migrants. Wing ♂ 105, 106.

HIRUNDINIDAE

Hirundo rustica rustica Linnaeus: Common Swallow.

The Common Swallow was found in the Central Valley, flying about in areas of trees. A male in breeding condition was taken at Thankote in April.

Hirundo daurica daurica Linnaeus: Northern Striated Swallow.

A female of this darker migrant subspecies was collected December 7th on the Sisagarhi Trail at 5,000 ft. Wing 119.

Hirundo daurica nipalensis Hodgson: Nepal Striated Swallow.

The Striated Swallow was found breeding in April and May from Bhimpedi up throughout the Valley. A series measure; wing ♂ 112-118, ♀ 115-117.

Hirundo rupestris Scopoli: Crag Martin.

A single female Crag Martin was shot over Chainpur in February.

Riparia paludicola brevicaudata (Horsfield): Indian Sand Martin.

Breeding males were collected at Tikapur in January. The species was also collected at Pharping in the Valley near the Power Station where it apparently breeds in holes in the cliffs of the Bagmati River. All the specimens collected were males. Wing 93-98.

MOTACILLIDAE

Motacilla maderaspatensis Gmelin: Large Pied Wagtail.

Found by us at Pharping in December.

Motacilla cinerea caspica (Gmelin): Eastern Gray Wagtail.

Common all over the Central Valley, and found also in open areas in the Terai in winter up to April at least.

Anthus hodgsoni yunnanensis Uchida & Kuroda: Northern Tree-pipit.

The northernmost breeding form of the three subspecies of the Tree-pipit is a very common migrant through Nepal. We collected them in trees and scrub at Godaveri, Thankote and Naggerjung in April and November, at Rekcha in December and in east Nepal from 4,000 to 8,000 ft. in January and February. These pipits travel in small flocks, walking over the leaves on the ground with soft rustling noises, and when flushed, flying up to a tree branch with a characteristic *tseep*, to perch with bobbing tail. (For measurements and key, see Ripley 1948b).

Anthus hodgsoni hodgsoni Richmond: Hodgson's Tree pipit.

This more boldly streaked bird was found by us at Mangalbare and Chitré in January and February, perching often on the tops of tall exposed trees. The birds were rather shy. Wing ♂♂ and ♀♀ 81-85.

Anthus richardi rufulus Vieillot: Indian Pipit.

A breeding species in the Valley in April. Found wintering in the Terai at Birganj in November. Wing ♂♂ and ♀♀ 76-82.

CAMPEPHAGIDAE

Pericrocotus flammeus speciosus (Latham): Himalayan Scarlet Minivet.

The large Scarlet Minivet was common in the Valley in April where it was a breeding species on Naggerjung. One of the breeding males is in first year plumage, similar to the female but more tinted with orange. We also found the minivet breeding in east Nepal at Chainpur February 10th. Wing ♂ 101.5-107, ♀ 101-103.5. The specimens have the characters assigned to the race by Deignan, (1946).

Pericrocotus ethologus laetus Mayr: Sikkim Long-tailed Minivet.

This species, formerly confused with the Short-billed Minivet (Mayr, 1940), was the only one of the two encountered by us in Nepal. I collected two females of this race climbing the hill to Chainpur at

4,200 ft. in February. A small flock was flying back and forth in a clump of *Pinus longifolia*. No males were secured. The females showed no gonadal development although chasing was going on. Wing 89, 90; tail 104, 105.

Pericrocotus ethologus favillaceus Bangs & Phillips: Western Himalayan Long-tailed Minivet.

Common on Naggerjung and at Gokarna where we found this minivet breeding in April, and apparently resident in November. We also collected it in the west Nepal Terai. Two males in first year plumage were taken in breeding condition in April.

Pericrocotus peregrinus peregrinus \leq **vividus**: Small Minivet.

The Small Minivet was found only in the Terai, and not too commonly. Birds from west Nepal seem to be intermediate between *peregrinus* and *vividus*. Both males and females are brighter, more yellowish on the abdomen than typical *peregrinus*, but paler, more pure gray on the upperparts and slightly less bright yellow on the underparts than *vividus*.

Pericrocotus peregrinus vividus Baker: Burmese Small Minivet.

A single female taken at Biratnagar belongs to this eastern race.

Hemipus picatus capitalis (McClelland): Brown-backed Pied Shrike.

The little Pied Shrike was collected in the Terai and up to 5,000 ft. in west and central Nepal. Breeding birds were found in February and April in the Terai. A male from Rekeha has the brown back feathers mixed with black.

Tephrodornis pondiceriana pondiceriana (Gmelin): Common Wood-shrike.

This small Wood-shrike was common in the Terai in west and central Nepal in open secondary growth and light forest where as usual it was seen in small flocks and family parties. Wing ♂ 90-91.5, ♀ 83-87.5. Females were collected far more commonly than males.

Tephrodornis gularis pelvica (Hodgson): Nepal Wood-shrike.

The larger of these two curiously similar species was taken throughout the Terai and up to Bhimpedi. Birds were in breeding condition in February, an earlier date than usually noted for this Wood-shrike. Wing ♂ 117-123; ♀ 118, 120.

Coracina fimbriata melaschista (Hodgson): Dark Gray Cuckoo-shrike.

A common breeding species in woods in the Valley. Apparently wintering birds were also found in the east Nepal Terai. This Cuckoo-shrike seems to breed in April in Nepal, from the evidence of our specimens, while a male from the Khasia Hills taken in mid-March was in breeding condition. Does the species breed earlier in the east? Wing ♂ 120-127.

Coracina novaehollandiae nipalensis (Hodgson) Large Himalayan Cuckoo-shrike.

The large Himalayan Cuckoo-shrike was a familiar feature of the Terai forests and on in open country up to 6,000 ft. where it was breeding on Naggerjung in April. A female with large oviduct eggs was taken April 20. The loud broken tremolo whistle of this bird was often heard in the foothills from east to west. The species will apparently adapt itself to the devastated conditions of the 2-5,000 ft. level in certain areas where the soil has been destroyed and only poor scrub can exist. Wing ♂ 177.5-187.5, ♀ 177.5, 182. The breeding female is in very worn plumage but shows no sign of moult.

LANIIDAE

Lanius schach tricolor (Hodgson): Himalayan Black-headed Shrike.

The Black-headed shrike was the common breeding shrike of the Valley where we found birds with enlarged gonads at Naggerjung and Gokarna in April. The species frequented light scrubby woods in contrast to the more open country habits of its migrant neighbour from Tibet and the higher hills.

Lanius schach tricolor xerythronotus

A male and a female taken at Tikapur and Rekcha furnish the first records from west Nepal of this hybrid population found farther west in the Himalayan foothills of Kumaon and Garwhal. Both birds have irregular areas of grayish on the crown and irregular gray shading on the shoulders and nape. This 'hybrid swarm' apparently does not get as far east as central Nepal.

Lanius tephronotus tephronotus (Vigors): Gray-backed Shrike.

Collected in open scrub at Gokarna in April and at Chatra in February.

Lanius cristatus cristatus Linnaeus: Brown Shrike.

A common winter visitor to the Terai where it was taken by us in open areas, especially on telephone wires in November, January, February and March.

ARTAMIDAE

Artamus fuscus, the Ashy Swallow-shrike, was seen commonly in the Terai in open areas, and up to Bhimpedi, but no specimens were collected.

AEGITHINIDAE

Aegithina tiphia tiphia (Linnaeus): Iora.

The Iora was common in the Terai, almost always in bushes near streams. There is a typical facies near the banks of the big streams where flooding has created a zone of scrub which grows over the gravel and rocks washed down each season. Here we found the birds during the winter months, not singing. Nepal birds seem slightly paler above and below than topotypes from Bengal in fresh

plumage. No specimens were in breeding condition, although Bengal birds with enlarged gonads were taken in January, and Assam specimens in March.

Chloropsis hardwickii hardwickii Jardine & Selby : Orange-bellied Chloropsis.

Common in second growth in the Central Valley from 5-6,000 ft. A bird also of the ridges in the light forest that now remains. A male coming into breeding condition was taken in April. Breeding birds in Assam were taken in mid-March, a month earlier. A Nepal series measure: wing ♂ 93-95. This mid-montane zone species was not seen in east Nepal.

Chloropsis aurifrons aurifrons Temminck : Gold-fronted Chloropsis.

The Gold-fronted Chloropsis was found by us in the upper Terai forest adjacent to the foothills and into the 'duns'. The species was found in thick forest only, invariably near flowering trees. Birds were in breeding condition at Chatra in late February.

PYCNONOTIDAE

Pycnonotus flaviventris flaviventris (Tickell) : Black-crested Yellow Bulbul.

In my paper on Ceylon birds (1946) I have already stated my reluctance to place the distinctive S. Indian and Ceylon bulbuls, *gularis* and *melanicterus* in with *dispar* and *flaviventris* contra Delacour (1943). I feel that the crested black-throated bird of the sub-Himalayas can well stand alone, separate from the crestless ruby-throated species from which it is widely separated geographically as well.

These crested bulbuls were found by us in the wooded parts of the Terai close to the foothills. A breeding male was taken at Chatra February 18. A single male from the Khasia Hills seems more bronzy-olive and darker on the breast than Nepal males.

Pycnonotus leucogenys leucogenys (Gray) : White-cheeked Bulbul.

A common species from the Terai to 6,000 ft., feeding in the open scrub on berries and seeds and hunting in large flocks in the winter season. Breeding birds were taken in April and May in the Valley and down to Bhimpedi. These spring birds were in very worn plumage but the moult had not yet commenced.

Pycnonotus cafer pygaeus (Hodgson) : Eastern Indian Red-vented Bulbul.

There is a slight cline in color in this species from west to east in Nepal, western birds approaching *intermedius* in color. However, they do not agree with that form in size. A series measure: wing ♂ 96-106, culmen 17-19.5. A specimen was breeding April 8 at Thankote. Another male from this village had a single white feather in the crown.

It is worth noting that, following Deignan's recent revision of this species (1949), birds from the Mishmi Hills agree with *primrosei* rather than *pygaeus* in the color of the ear coverts.

Alcurus striatus striatus (Blyth): Striated Green Bulbul.

Uncommon in Nepal. Collected only round Chandragiri Pass and at Chitré in the zone of oaks and rhododendrons at 7,500 ft.

Microscelis maclellandi maclellandi (Horsfield): Rufous-bellied Bulbul.

A rather shy bulbul, not easy to approach either in scrub or in tall trees, both of which it seems to favour at different seasons. Breeding males were taken in thick secondary scrub in mid-April at Thankote and Naggerjung. A single male from Rekcha, one of the only two birds of this species seen there, has a slightly suffused, less well-defined white throat patch, streaked with fuscous.

Microscelis flavala flavala (Hodgson): Himalayan Brown-eared Bulbul.

A pair of this pretty bulbul were taken at Bhimpedi in May. The birds were breeding. They measure; wing ♂ 100, ♀ 97; tail ♂ 93, ♀ 87; culmen 19 (both). Assam and Burma specimens tend to be somewhat darker, especially on the lower surface.

Microscelis madagascariensis psaroides (Vigors): Black Bulbul.

The Himalayan Black Bulbul was common in central and eastern Nepal but was not seen in the western part. Birds were breeding in April and May. In the Mangalbaré area the species seemed scarce and was definitely shy. These birds measure wing ♂ 120-20, ♀ 114-123.5; tail ♂ 102-114, ♀ 93-107; culmen ♂ 25-27, 23.5-26.

If Mishmi Hills birds are compared with fresh fall and winter-plumaged *psaroides*, it may be observed that they are intermediate between *psaroides* and *nigrescens*, darker than the former, but lighter than the latter. They also tend to be larger than typical *psaroides*.

CINCLIDAE

Cinclus pallasii tenuirostris Bonaparte: Brown Dipper.

The only specimens of the Brown Dipper collected were taken at Kulikhani at 4,750 ft. in the Markhu Valley on the trail into Katmandu. The species was also seen at similar elevations in eastern Nepal on small feeders of the Kosi River system. A male with slightly enlarged gonads was taken in November. The wing of this specimen measures 98.

TROGLODYTIDAE

Troglodytes troglodytes nipalensis Blyth: Nepal Wren.

A good series of the little wren were taken from Dur on up to Mangalbaré at altitudes ranging from 8,500-10,000 ft. The species was not otherwise seen. Smythies (l.c.p. 441) reports these wrens from the Gandak-Kosi watershed north of the Valley. The birds were seen only on the bare grassy Alpine meadows and not in the forest. Their little *tsit, tsit* call was often heard, but the birds were seldom seen, as they crept about in the grass and low plants close to the ground. These birds come within the measurements given by Kinnear (1944).

MUSCICAPIDAE

Subfamily TURDINAE

Cochoa purpurea : Purple Thrush.

A bird, presumably of this species was flushed out of a damp thicket at Bhimpedi in May.

Enicurus immaculatus Hodgson : Black-backed Forktail.

This species is found in the foothills from one to four thousand feet. Forktails were observed on or near small streams within the Siwalik range, and along the 'duns', frequenting overgrown thickets and masses of bracken or other fern. A male taken near Kune Ghat on the Karnali has a wing measurement of 93.5.

Erithacus cyanurus pallidiora (Baker) : Kashmir Bush Robin¹.

A single female taken at Rekcha December 29 is pale and seems to belong to this race. If so, it is a first record for Nepal. Wing 76.

Erithacus cyanurus rufilatus (Hodgson) : Red-flanked Bush Robin.

A male and female of this darker race were collected at Mangalbaré in February and measure; wing ♂ 87, ♀ 82.

Erithacus indicus indicus (Vieillot) : White-browed Bush Robin.

A pair were taken at Mangalbaré in February.

Erithacus calliope calliope (Pallas) : Ruby-throat.

Found in February in east Nepal at 1,200 ft. along the Arun Kosi.

Erithacus brunnea (Hodgson) : Indian Blue Chat.

The Blue Chat was common at Gokarna and Chandragiri in March and April. A male, April 2, was in breeding condition and singing lustily in a dense thicket near the main trail into the Valley. Soft parts: iris dark brown; bill black; legs brownish-flesh, or, grayish-flesh.

Erithacus leucura (Hodgson) : White-tailed Bush Robin.

A male was taken at Chitlang in forest at 6,500 ft. in April.

Phoenicurus frontalis (Vigors) : Blue-fronted Redstart.

Non-breeding birds were very common around Mangalbaré above 8,000 ft., and in the Valley above 6,000 ft. in November. Where present the species was ubiquitous in clearings, scrub pasture, or open areas near small streams. Its single note, a sort of *tik* or *click* was often the only sound in these quiet Alpine meadows.

Phoenicurus schisticeps (Gray) : White-throated Redstart.

A single female was collected out of a flock wandering over open meadows and light scrub at Mangalbaré, February 1. Wing 81.5.

¹ For notes on the genera of the Thrushes see Ripley. (Mss)

Phoenicurus fuliginosus fuliginosus (Vigors) : Plumbeous Redstart.

Common along the upper Bagmati and other streams in the Central Valley where rapids and boulders occur. Found also along the Kosi in similar situations from 1,000-5,000 ft. Immature birds were collected at Sundarijal in May.

Phoenicurus leucocephalus (Vigors) : White-capped Redstart.

Seen and collected along all the big rivers between 1,000-4,500 ft. As in the case of the Plumbeous Redstart, this species prefers falling water and rapids.

Saxicola caprata bicolor Sykes : Northern Indian Stone-chat.

The Indian Stone-chat occurs in the Terai areas immediately adjacent to the Indian border. Specimens were taken at Kauriala Ghat.

Saxicola torquata indica Blyth : Indian Bush-chat.

Breeding Bush-chats were collected at Gokarna in April, the earliest date being the 19th. An exceptional male, taken February 8 in east Nepal is recorded as in breeding condition. A juvenal bird was taken in April in Gokarna, so that it may be that these birds begin breeding as early as February.

These were active chats, in light scrub and weeds at the edges of meadows and pasture land. They perch characteristically on a bush in the centre of a grassy clear space, and fly out to hawk after insects, returning to the same perch.

Saxicola torquata przewalskii (Pleske) : Turkestan Bush-chat.

A pair were collected at Pharping in December on open dry paddy land. The back of the female is enough paler than that of the Indian race to serve as a field character.

Saxicola ferrea ferrea G. R. Gray : Dark Gray Bush-chat.

A male was taken at Chisapani April 30. Wing 68.

Saxicoloides fulicata cambaiensis (Latham) Black-backed Indian Robin-chat.

Common in the Terai in similar situations to those in India proper. Eastern Nepal specimens, which were not examined, may belong to *stuart-bakeri*.

Prunella immaculata (Hodgson) : Maroon-backed Accentor.

Small flocks of these birds were common at Mangalbaré in low rhododendrons, on the edges of clearings or on the ground in the open. The birds were shy and difficult to approach. Three females measure; wing 78-81; tail 49.5-57; culmen 12.5-13. Soft parts: iris orange with white inner ring; bill black legs pale brownish-flesh.

Prunella strophhiata strophhiata (Blyth) : Rufous-breasted Accentor.

A male and female were taken at 4,300 and 8,750 ft. in east Nepal. They measure: wing ♂ 71, ♀ 66. Soft parts: iris brown; bill brownish-black; legs brownish-flesh. This Accentor was found in the open on scrubby meadow land.

Copsychus saularis saularis (Linnaeus): Magpie-robin.

Found from the lowlands up to the Katmandu Valley wherever cultivation and villages occurred. Breeding specimens were taken in April.

Copsychus malabaricus indicus Baker: Eastern Shama.

The Shama was common in the Terai forest in central and eastern Nepal and was not found in the west. These birds are basically intermediate between *indicus* and *malabaricus*, although closer to the former with which subspecies I have included them. In color males are slightly paler, females definitely paler on the lower surface than *malabaricus*, and females are slightly lighter in color on the upper surface also. Males from Nepal, Sikkim and the U.P. are slightly darker on the lower surface than Assam birds, but the population is an intermediate one, implying a continuous cline in this character. The measurements of a number of specimens follows:

		Wing			Tail		Culmen	
S. and Western India	10 ♂♂	94-99	(96.2)	27	160-207	(180.9)	8	16.5-18
	4 ♀♀	87-90	(88.3)	9	113-136.5	(125.1)	3	16.5-17
E. Ghats, M.P., Nepal, U. P., Sikkim	4 ♂♂	91-98.5	(94.8)	11	133-159	(147.1)	4	17-18
	4 ♀♀	84-90	(87.7)	5	110-126	(118.4)	3	17-(3)
Bhutan Duars, Assam, Burma.	6 ♂♂	91-96	(94)	17	112-148	(135.6)	6	16-19
	3 ♀♀	90-91		6	102-124	(111.5)	3	17-18

The above measurements indicate again a cline in size, but the differences are not great enough to make it necessary to designate an intermediate population. The suggestion has been made that the short-tailed eastern birds were all collected in winter, making the tail length a seasonal character, but enough specimens have been taken at other seasons to disprove this assumption. Presumably the short-tailed examples are young or moulting birds. From the above evidence I would list the ranges of the two races as follows:

(a) *Copsychus malabaricus malabaricus*

Western Ghats south through Mysore, Malabar and Travancore in evergreen and moist deciduous biotope.

(b) *Copsychus malabaricus indicus*.

From the Bhutan Duars, Assam and western Burma west along the foothills to central Nepal, south through the U.P. and Bihar to the eastern Madhya Pradesh (= Central Provinces), and in Orissa to northern Madras in the Eastern Ghats wherever suitable evergreen and moist deciduous forest exists.

Monticola rufiventris (Jardine & Selby): Chestnut-bellied Rock thrush.

A male was collected at Chisapani April 27, on the trail to the Central Valley.

Monticola cinclorhyncha (Vigors): Blue-headed Rock-thrush.

Breeding specimens were taken at Bhimpedi and Naggerjung in April and May. Soft parts: iris brown; bill black; legs grayish-brown.

Monticola solitarius pandoo (Sykes): Indian Blue Rock-thrush.

A single immature male was taken in the Terai in February. It is not uncommon in open areas during the winter.

Zoothera dauma dauma (Latham): Small-billed Mountain Thrush.

A juvenal male was collected on Naggerjung in late November, and a male coming into breeding condition was taken at Godavari in late April. This species was found between the Terai at the base of the hills, and 6,000 ft. in the winter, and above 4,500 ft. in April and May. It is a quiet bird of the heavy forest or on forest edges in well-grown bushy cow pastures near streams. There is considerable individual variation, some specimens being more heavily banded with black than others, particularly on the head.

Zoothera dixonii (Seeböhm): Long-tailed Plain-backed Mountain Thrush.

A single male of this obscure species was taken at Mangalbaré in deep jungle in February. Soft parts: iris brown; bill dark brown, base of lower mandible pale; legs flesh.

Zoothera citrilinea citrilinea (Latham): Orange-headed Ground Thrush.

The Orange-headed Ground Thrush was found breeding at Gokarna in May. I found a nest with the bird sitting in the first week of May. The nest was placed about eight feet up in the crotch of a sapling growing in a gully in thick woods. The situation allowed one to look in easily from the bank. The bird was very shy, and flushed when I was still some distance away. The species was not observed during the winter in the Terai. This is certainly one of the commonest of the thrushes in the Valley, and with the Gray-winged Blackbird, is commonly kept as a pet by the Newars.

Turdus rubrocanus rubrocanus Gray: Gray-headed Thrush.

One flock was seen at Mangalbaré, but unfortunately no specimens were taken.

Turdus boulboul (Latham): Gray-winged Blackbird.

Found in the Terai on the edge of the hills in February, and on up to 6,000 ft. in April and May. Breeding males were collected on Chandragiri Pass and at Gokarna.

Turdus ruficollis Pallas: Red-throated Thrush.

Specimens were taken on Naggerjung in April. They were silent and shy, sitting quietly in low fruiting bushes. Soft parts: iris dark brown; bill, upper mandible black, lower basally dark yellow, distally black; legs brownish-yellow (♂), grayish-brown (♀).

Turdus unicolor Tickell: Tickell's Thrush.

Found in the winter in the Terai and up to 4,700 ft. in April in central Nepal.

Myiophonus caeruleus temmincki Vigors: Himalayan Whistling-thrush.

Whistling-thrushes were collected in winter from 900 ft. up, and breeding males were found in the Valley in April and May. A male had the bill and feet covered with cow dung, evidently in quest of larvae. There seems to be a cline in size in the Nepal populations, birds from the west averaging larger. One male from Rekcha has a wing of 192, much larger than any measurement given by Delacour for the race (1942).

Subfamily TIMALIINAE

Pellorneum ruficeps mandellii Blanford: Nepal Spotted Babbler.

All specimens taken in west, central and eastern Nepal prove to belong to this race. The Spotted Babbler was found in the 'duns' in winter and in the Terai foothills at 1,000-2,000 ft., while in April it was found higher, well into the hills to 4,500 ft. However, in the Valley it seems to be a year round resident in such places as Naggerjung. Breeding birds were taken in March and mid-April.

Malacocincla sepiaria abbotti Blyth: Abbot's Babbler.

This distinctive babbler was found only in the Terai at Chatra where it occurred in dense scrub patches in original forest. It was quiet and fairly shy. Soft parts: iris reddish-brown, light reddish-brown; bill upper mandible black, lower gray; legs brownish flesh. Wing ♀ 77, 80; tail 47.5, 51; culmen 20, 21.5.

Pomatorhinus montanus schisticeps Hodgson: Slaty-headed Scimitar Babbler.

A pair taken at Rekcha measure: wing ♂ 106, ♀ 97.5. Soft parts: iris yellow; bill yellow, base of maxilla black; legs ♂ grayish-brown, ♀ bluish-slate. It is interesting to note that in a female of *cryptanthus* taken at Nongpoh, Khasia Hills, Assam, in March 1949, the iris is given as orange-yellow and the legs dark slate, and in two males of *salmalii* the iris is pale red and the legs brown, and feet gray. Apparently the color of the soft parts have racial value, and males also tend to have rather more brownish legs than females, as the above color notes were all made by Migdalski and myself.

Pomatorhinus ruficollis ruficollis Hodgson: Rufous-necked Scimitar Babbler.

This shy little Scimitar Babbler was collected both in western and central Nepal. We found it from 5,000-9,000 ft. Birds were in breeding condition in mid-April. Soft parts: iris ♂ red, ♀ reddish-brown, pale brown; bill, upper mandible black, distal end of tomium light horn to yellow, lower mandible yellowish-white, yellow; legs brown, feet slate, pads dull yellow. Wing ♂ 82.5 (2), ♀ 75-78.5. I cannot

include this species in *montanus* as Delacour does (1947), when both breed throughout the same area.

Pomatorhinus ruficollis godwini Kinnear : Godwin's Rufous-necked Scimitar Babbler.

At Mangalbaré we secured a single female in dense rhododendron thickets at nearly 9,000 ft. Soft parts: iris reddish-brown; bill yellow, $\frac{2}{3}$ of the culmen and base of the maxilla black; legs brown, feet slate.

Kinnear (1944) named this race from Bhutan. The Mangalbaré specimen is in fresh plumage as are my central and west Nepal birds, and is so much darker, more olive below, and darker, more chestnut above, that it stands out at once. Presumably fresh Sikkim skins would also agree with this specimen and those from Bhutan and S.E. Tibet, rather than Nepal birds as Kinnear states (I.c. p. 79). In this I believe that he has made a mistake, as he quotes Godwin-Austen as saying that Dafla birds are similar to those of Darjeeling rather than Nepal. The range of *godwini* should thus be; Eastern Nepal, east of the Arun Kosi River, Sikkim, Bhutan, S.E. Tibet and Dafla Hills.

This specimen measures: wing 80.5, tail 84, culmen 23, hind claw 13.

Pomatorhinus erythrogenys ferrugilatus Hodgson; Hodgson's Rusty-cheeked Scimitar Babbler.

A large series of the Rusty-cheeked Scimitar Babbler from western and central Nepal serves to show that the bird figured by Gould (1832), represents in fact the west Himalayan population with a clear white throat. Therefore, it is better in this case to follow Ticehurst and Whistler (1924) in restricting the type locality for typical *erythrogenys* to the Simla-Almora area.

Compared to Sikkim and Darjeeling birds, *haringtoni* Baker, the Nepal population is much paler, less saturated on the throat. Sikkim birds are very dark gray on the throat without the distinctive dark spots on the breast. They are also darker above and on the flanks. Compared with Kulu birds, those from Nepal are darker above and somewhat grayish on the throat, and the spots on the breast are darker. West Nepal specimens are slightly intermediate, but are dark enough on the throat to be included with the central Nepal population. Thirteen males measure: wing 95-100.5 (97.8); tail 96-108 (101.5); culmen 32.5-36 (35.7).

Birds in very worn plumage were taken in early May. Breeding males and females were collected in mid-April. May birds were not in breeding condition. This scimitar babbler is a rather bold bird, the most noticeable babbler in Nepal, really, with a great variety of harsh loud calls. We found it from 3,800-6,000 ft. in secondary scrub often on the edge of cultivation.

Pnoepyga albiventer pallidior Kinnear: Western Scaly-breasted Wren-Babbler.

A single male of the Scaly-breasted Wren-Babbler was shot at Chisapani in western Nepal. It came out from some loose rocks under my feet as I stood in light mixed evergreen and deciduous forest not far from the Karnali River bank. Soft parts: bill blackish-brown, base

of lower mandible whitish; legs pale brown. Wing 60, tail 14. This specimen belongs to the paler western race, while central Nepal birds are *albiventer*. The bird lacks the fulvous subterminal spots on the upper surface.

Stachyris pyrrhops Blyth : Red-billed Babbler

This is the most ubiquitous babbler in the Valley. Birds were taken at all seasons from the edge of the Terai up to 6,000 ft. Breeding specimens were taken from 3,800 ft. up in April and May. In the spring the flocks seem reduced, but small parties still hunt together. A series from central Nepal measure: wing ♂ 53-56 (54.4), ♀ 50.5-52.5 (51.5); tail ♂ 50-52.5 (51.5), ♀ 45-51.5 (48.5); culmen ♂ 13-15 (14.1), ♀ 13-14 (13.4). Thus there is dimorphism in size if not in color in this species.

Birds from western Nepal and the western Himalayas seem slightly smaller, wing ♂ ♂ and ♀ ♀ 49.5-53 (51.9), as against 50.5-56 (53.3), but there is too much overlap to make the difference significant. This is interesting, however, as a reversal of the usual size cline.

Stachyris nigriceps nigriceps Hodgson; Black-throated Babbler.

A mid-montane zone babbler found from 3,800-6,000 ft. in the central area from Bhimpedi up to Godaveri. It calls with a rather pretty though mournful descending trill. Soft parts: iris dull brownish-white, dull whitish yellow (May); yellow (November); bill, upper mandible dark brown, black, lower whitish, fleshy-white; legs dull yellow, dull greenish-yellow. Wing ♂ 55-58. Males and females were in breeding condition at Bhimpedi in May.

Dumetia hyperythra hyperythra (Franklin): Rufous-bellied Babbler.

A common species in the western Terai at Tikapur and Chisapani, frequenting bushes and grassy scrub on the edge of jungle. This species in its behavior, habits and appearance seems very close indeed to *Stachyris*. A series of both sexes measure: wing 53.5-58; tail 57-62.

Macronus gularis rubricapilla (Tickell): Yellow-breasted Babbler.

The Yellow-breasted Babbler proved to be the commonest babbler of the eastern Terai and 'duns'. We found it in thick scrub and light second growth evergreen forest at Chatra and Muhlghat. Birds were coming into breeding condition in late February. This babbler has not previously been recorded from Nepal.

Wing, males and females, 52-59. Soft parts: iris whitish, yellow; bill slate; legs pale brown.

Timalia pileata bengalensis Godwin-Austen: Bengal Red-capped Babbler.

We found the Red-capped Babbler only at Tikapur in the thick acacia and 'jhaveri' (*Zizyphus*) scrub on small islands in the dry river beds. The birds were restless and shy, giving themselves away only by their bright sharp calls. All specimens collected were females. Wing 56-60.5; culmen 15-17.

Chrysomma sinense sinense (Gmelin): Yellow-eyed Babbler.

A male and two females from Tikapur measure: wing ♂ 68, ♀ 62, 64.5; tail ♂ 93, ♀ 85, 94.5; culmen ♂ 12.5, ♀ 12 (2). Soft parts: iris yellowish, ocular skin yellow; bill black; legs yellow. The Yellow-eyed Babbler was not as common as the Red-capped and other lowland babbler species of the western Terai.

Paradoxornis unicolor unicolor (Hodgson): Plain-colored Parrotbill.

A single male was secured out of a small flock in mixed bamboos and firs (*Abies*) at 9,400 ft. on Tinjuré ridge February 1. This species has not been recorded from Nepal since Hodgson's time. Wing 92, tail (worn) 99, culmen 15.

Paradoxornis poliotis humei (Sharpe): Black-fronted Suthora.

A single female was taken from a flock streaming through a group of thin long bamboos and rhododendrons at Mangalbaré. It agrees perfectly with Sikkim examples. Wing 46, tail 51, culmen 7. The species has not previously been recorded from as far west as this locality in Nepal.

Turdoides earlii (Blyth): Striated Babbler.

Found in high grass and thick acacia scrub in the western Terai at Tikapur. Soft parts: iris yellow; bill brownish-horn; legs pale grayish-brown.

Turdoides somervillei terricolor (Blyth): Seven Sisters or Jungle Babbler.

Specimens were taken in open cultivated country in the Terai in the western and central areas. A November male is noted as in breeding condition. Birds in very worn plumage were taken in late May.

Acanthoptila nipalensis (Hodgson): Spiny Babbler.

The rediscovery of this species was one of the most interesting results of the Expedition. I collected a single male out of a small flock of seven or eight birds at Rekcha on Christmas Day. The birds were in an open field which was spotted with low patches of shrubbery, and were hunting, partly on the ground, partly in the lower branches. They were calling in a series of short-syllabled *churrs*, rather deep and musical, more like laughing thrushes than the typical 'Seven Sisters', and I thought at the time and afterwards when I had first examined the bird, that I had something close to *Garrulax lineatus*. The bill of the Spiny Babbler is particularly reminiscent of *Garrulax* in addition to what I heard of its voice. The feathers of head and mantle, throat and upper breast of course have strong spinous shafts. Contra Delacour (1947, p. 20) who says merely that the genus *Acanthoptila* 'cannot be maintained', I feel that it serves as a valid link between *Turdoides* and *Garrulax*. Its generic characters may be listed as the distinctive spiny shafts above alluded to, and reduced rectal bristles, more prominent, however, than in *Turdoides*. In bill shape, nostrils, under-wing coverts and legs it is like a typical *Garrulax*. In plumage pattern, tail and wing shape and size it is like *Turdoides*. Its voice

seems to be more like *Garrulax* than *Turdoides*, its habits similar to species of both.

Soft parts: iris white; bill, upper mandible brownish-black, lower light gray on the basal half, distally black; legs light brownish-gray. Wing 84, tail 104, bill (from skull) 24.5, tarsus 30.5. This specimen is a fully adult male and is normally colored with a white superciliary, ear coverts, throat and upper breast. I believe the occasional variable amount of white referred to by Baker (1924, p. 203) is an individual variation.

Of the seven specimens listed by Sharpe (1883, p. 380), the Bird Room staff at the British Museum could find only three in April 1949. In addition there is one skin in New York received in exchange, making a total of four. This new skin is the first collected since Hodgson's or Pinwill's time and represents the first seen alive by an ornithologist. It is illustrated on the accompanying plate reproduced by courtesy of the National Geographic Magazine. Evidently this is a hill species of the 5,000 ft. zone in open scrub or secondary growth in west Nepal. Its habitat preference should allow it to survive and tolerate to a considerable extent the rapid deforestation which is occurring at that level.

***Garrulax albogularis albogularis* (Gould):** White-throated Laughing-thrush.

The commonest of the laughing-thrushes encountered by us in western and central Nepal from 4,000-6,000 ft. It was a bird of the scrub and light thick jungle. At Rekcha large winter flocks of this species were often out on the open paddyfields in the early morning apparently feeding on insects, doing a considerable amount of scratching and digging with their powerful feet about the young shoots of rice and barley. Breeding specimens were taken in March and April round Godaveri and Naggerjung. Soft parts: iris white; legs bluish or whitish-gray.

***Garrulax striatus vibex* Ripley:** Nepal Striated Laughing-thrush.

This species appeared common at Godaveri in thick second growth. Birds were breeding in late April and were separated at that time from the hunting flocks of other laughing-thrushes, being only with their own kind. A young bird in adult plumage with pointed tail feathers was collected there in late November. This is an intermediate population, darker than *striatus*, and noticeably paler than *sikkimensis*. Birds from western Nepal also belong to this race.

***Garrulax striatus sikkimensis* (Ticehurst):** Sikkim Striated Laughing-thrush.

This darker race was found at Mangalbaré in thick forest just below 9,000 ft. in February, a higher range than is ordinarily attributed to this species, but one perhaps made necessary by the absence of any evergreen forest in this area at lower altitudes.

***Garrulax leucolophus leucolophus* (Hardwicke):** White-crested Laughing-thrush.

The White-crested Laughing-thrush was local and only collected by us at the following localities: the Valley, December and April;



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Yellow-billed Blue Magpies (*Kitta f. flavirostris*)

Spiny Babbler (*Acanthoptila nipalensis*)

rosefinch (*Carpodacus n. nipalensis*)

Grosvenor's Laughing-thrush (*Garrulax r. grosvenori*)

Bhimpedi May; west Nepal at Chisapani, 1,000 ft. and Rekcha, 5,000 ft. (uncommon there) in December; east Nepal, Muhlghat, January and February. At Chisapani we collected only males; in the Valley in April we collected only females.

In series the wing of these males and females ranges from 130-140. Birds from east Nepal are slightly darker above and below than birds from the rest of the country and range in measurements from 130-135, this cline in color and partial cline in size leading towards *hardwickii* Ticehurst of Assam, as pointed out by that author (1926).

Garrulax rufogularis grosvenori Ripley: Grosvenor's Rufous-chinned Laughing-thrush.

This laughing-thrush was a common species at Rekcha, but was decidedly inconspicuous and a great skulker. The birds had a series of alarm notes, rather harsh and loud, but when at ease calling to each other, a delightful range of chuckles and low conversational notes. A series measure: wing ♂ 87-94, 84-91. Soft parts: iris brown; bill, upper mandible brownish-horn, lower grayish-brown; legs grayish-brown. This population differs from typical *rufogularis* of central Nepal and Sikkim by being much paler and less heavily barred on the upper surface, and from *occidentalis* of the western Himalayas by being more olivaceous with larger terminal spots above and below. It is also illustrated in the coloured plate herewith.

Garrulax caerulatus caerulatus (Hodgson): Gray-sided Laughing-thrush.

A party of these birds was found at Godaveri one day in November hunting with other laughing-thrushes in heavy mixed scrub. They had not been encountered in the spring and must have been wintering birds. They had rather loud musical calls of four notes, a sort of chuckling series, not really whistled. Wing ♂ 107, 111.5, ♀ 106.

Garrulax lineatus lineatus (Vigors): Streaked Laughing-thrush.

A single male presented by Dr. Walter Koelz and taken on Chandragiri Pass where I observed a small flock creeping rodent-like over the humus and ground cover, is my only record of this species.

Garrulax affinis affinis Hodgson: Black-faced Laughing-thrush.

This was the commonest Laughing-thrush at Mangalbaré where it frequented heavy thickets in the rhododendrons, often hunting in parties with *Alcippe vinipectus*. A series measure: wing ♂ 108-111, ♀ 102-107. Soft parts: iris brown; bill black; legs pinkish-brown.

Garrulax erythrocephalum erythrocephalum (Vigors) Red-headed Laughing-thrush.

A species noted only in the vicinity of Chandragiri Pass in April. These birds are red-headed, and as Nepal is given as the type locality of Oates's *nigrimentum*, it would be better perhaps to restrict the type locality of that form to Ilam district, eastern Nepal.

Leiothrix argenteauris argenteauris (Hodgson): Silver-eared Mesia.

Seen at Bhimpedi, and at Chisapani in west Nepal. A breeding male was shot on May 3 at the former place. Wing 77.

Leiothrix lutea callipyga (Hodgson): Indian Red-billed Leiothrix.

A bird of heavy scrub and forest remnants, found at Godaveri and Chandragiri Pass. Soft parts: iris brown; bill red, black at base; legs pale brown.

Myzornis pyrrhoura Hodgson: Fire-tailed Myzornis.

A single female was collected on a high tree in original forest at Mangalbaré from a flock of mixed species. Soft parts: iris dark brown; bill black; legs yellowish-brown. Not recorded from Nepal since Hodgson's time, although Stevens (1923) secured a series on the Singile La Ridge on the Nepal-Sikkim frontier at 10,160 ft. in March.

Pteruthius erythropterus (Vigors): Red-winged Shrike-babbler.

Met with only at Chandragiri Pass. Wing ♂ 82, ♀ 83.

Actinodura nipalensis nipalensis (Hodgson): Hoary Bar-wing.

The Hoary Bar-wing was taken at Chandragiri Pass in late April. Soft parts: iris brown; bill black; legs light grayish-brown. Birds in worn plumage were collected in May. A pair measure: wing ♂ 93, ♀ 88.

In Hodgson's time (1836) this Bar-wing could apparently be found in the garden of the British Residency in Katmandu, a far cry from conditions as they exist today. Bearing that in mind, however, I have restricted the type locality of *nipalensis* (l.c., 1950) to the slopes of the Katmandu Valley.

Actinodura nipalensis vinctura Ripley: Eastern Hoary Bar-wing.

The Bar-wings found at Mangalbaré agree with Sikkim and Bhutan specimens in having a much wider black terminal bar on the upper surface of the tail than in the nominate form, and also having heavier black barring on the wings and tail.

We found these birds in dense thickets on the edge of evergreen jungle. They were shy and skulking and raced through the thick growth from branch to branch with the ease of a squirrel.

Siva strigula strigula Hodgson: Stripe-throated Siva.

In contrast to Scully's observation (1879), we did not find the Stripe-throated Siva common around the Nepal Valley, although birds were seen above Godaveri in late November. In east Nepal the species was very common above Chitré and at Mangalbaré. A series measure: wing ♂ 68-73, ♀ 64-68. Soft parts: iris brown; bill, upper mandible grayish-brown, lower grayish-white; legs gray, or brownish-gray.

Siva cyanuroptera cyanuroptera Hodgson: Blue-winged Siva.

A pair were taken in thick scrub at Godavari in November. Wing ♂ 65, ♀ 63.

Yuhina flavicollis albicollis (Ticehurst & Whistler): Western Yellow-headed Ixulus.

This Ixulus occurred at Rekcha. A single female has a wing of 65.5. Soft parts: iris brown; bill, upper mandible blackish-brown, lower light brown; legs dull yellow. This specimen compares perfectly with birds from farther west along the Himalayas.

***Yuhina flavicollis flavicollis* Hodgson**: Yellow-headed Ixulus.

A busy active little bird, working in flocks through the scrubby bushes (mostly *Randia* and alders, at Godaveri. Found also at Chitré associated with *Y. gularis*.

***Yuhina gularis gularis* Hodgson**: Stripe-throated Yuhina.

The Stripe-throated Yuhina was met with on Chandragiri Pass and at Chitré and Mangalbaré, usually well up in trees, where it was very active in small flocks of its own kind, or on occasion with *Y. flavicollis*. They have a characteristic series of twitters with sharp alarm *cheeps*. Birds in worn plumage were taken in late April. Fresh-plumaged east Nepal birds seem richer, more olive-tinted than birds from the Valley, but I lack specimens in truly comparable plumage. Soft parts: iris brown; bill blackish-brown; legs yellow.

***Yuhina occipitalis occipitalis* (Blyth)**: Chestnut-headed Ixulus.

Large flocks were in the tops of berry-bearing trees at Chitré in late January. Where the species occurs it seems to be very numerous. Soft parts: iris brown; bill brown; legs orange-brown.

***Yuhina zantholeuca zantholeuca* (Hodgson)**: White-bellied Erpornis.

Our experience in meeting this bird at 6,000 ft. in spring and late autumn in the Valley agrees with that of Stanford in Burma (1941), and is in contrast to the 'Fauna' (1924) where the range of the Erpornis is given as the plains up to 3,000 ft. I note that Mrs. Proud (1949) also found these birds on Naggerjung. Our specimens from the Valley were in breeding condition in mid-April. We found the species occurring singly or in pairs in the low shrubbery on Naggerjung, not associated with other species either in the spring or autumn.

***Alcippe castaneiceps castaneiceps* (Hodgson)**: Chestnut-headed Babbler.

The little Chestnut-headed Babbler is a rather shy bird, haunting the heavy undergrowth on the edges of clearings in evergreen jungle. We found these birds in small active flocks at the Chandragiri Pass in central Nepal and at Tinjuré in east Nepal. I doubt if this species winters below 3,000 ft. in Nepal, whereas Stevens (l.c.) reports it occurring down to 2,400 in Sikkim, and in Assam it descends to just below 1,000, another example of birds from the eastern part of the Himalayas descending lower down the slopes of the hills than their relatives in the western part of the range.

Males and females measure: wing 57-59, tail 41-44.5. I hereby restrict the type locality of this subspecies to the Chandragiri Pass, central Nepal, a locality where Hodgson's collectors probably found it. Mr. H. G. Deignan has been kind enough to assist me in looking over specimens from Siam of this species, which is particularly subject to post-mortem change. Comparison of considerable series from Nepal,

Sikkim, N. Burma, Tenasserim, Yunnan, Siam and Tonkin both of fresh and old skins shows the following differences:

In fresh skins;

Central Nepal.—paler, particularly on the crown and lighter on the crown and flanks. No size difference.

Eastern Nepal and Sikkim.—darker on the crown, and darker, more olive on the back and flanks.

In old skins (10 or more years old);

India, Sikkim, Burma, Yunnan.—lighter on the crown, more olive on the back.

Siam.—intermediate, some lighter, some darker on the crown, some grayish-olivaceous on the back, some more rufescent.

Tonkin.—darker, more blackish-rufescent on the crown, more rufescent on the back.

From the above it would seem as if there were a continuous cline of color differences, but a comparison of equally foxed or equally fresh skins from the whole range would be necessary to determine the exact shade of differences. From the speciation point of view there are probably several different populations, but I hesitate to recognise them. From the point of view of convenience in arranging these specimen in drawers in a museum (a necessary if arbitrary process) I would be inclined to recognize *castaneiceps* as the race of Nepal, Sikkim, Assam, Burma, Yunnan and Siam, and *exul* Delacour as the race of Laos and Tonkin.

Alcippe vinipectus vinipectus (Hodgson): Hodgson's Fulvetta.

An uncommon species in the Valley, seen only at Chandragiri in April.

Alcippe vinipectus chumbiensis (Kinnear): Eastern Fulvetta.

The Eastern Fulvetta is a much darker form than Hodgson's Fulvetta with streaking on the throat which is absent in most specimens of the nominate race. This little Fulvetta was one of the commonest wintering birds at Mangalbaré in February. The birds moved through both substage and upper layers of the forest. It was in mixed flocks with other species and again in uniform flocks. An interesting feature of our series was that out of fifteen specimens taken, only two were males. Possibly the sexes tend to segregate out at different altitudes in winter.

Alcippe nipalensis nipalensis (Hodgson): Nepal Quaker Babbler.

This little quaker babbler proved to be very common in the Valley in second growth or the remnants of evergreen forest as at Godaveri. We found the species breeding in late April. Worn-plumaged specimens were taken in late April, and freshly moulted birds in late November. A series of both sexes measure: wing 58-62, tail 57.5-66. This babbler was not found in either western or eastern Nepal, in the latter area probably missed due to the difficulties of hunting in so denuded an area.

Heterophasia capistrata nigriceps (Hodgson): Nepal Black-headed Sibia.

The Black-headed Sibia is one of the commoner birds in the forests at 5,000 ft. and above. Its melodic whistling call rings across the hills about the Chandragiri Pass where we heard it both in autumn and spring.

The name of this form is in some doubt. Ticehurst and Whistler in their paper restricting Vigors's types to one blanket area in the western Himalayas, stated categorically (l.c. p. 473) that '*Leioptila*' *capistrata* did not have a fixed type locality. Unfortunately they overlooked Baker who in the 'Fauna' (l.c. p. 296) had listed the type locality as Darjeeling. This seems firm enough. In addition Hartert (1891) in his original description of *pallida*, had referred to specimens discussed by Sharpe. (l.c. p. 404) from Butan and Nepal, and had said that Sikkim birds showed the characters of typical *capistrata*. There seems no sensible reason then to attempt to change the restricted type locality for *capistrata* from Darjeeling, as Vigors's original collection was a composite one.

I can distinguish three populations based primarily on color, but also on size. In the west Hartert's *pallida* extends from Hazara to Garwhal. This is the palest, least olive-tinted race and is slightly larger, wing 95-107. In Kumaon and western and central Nepal there is a darker, more cinnamon-colored form with a suffusion of olive in the brownish back feathers. This is Hodgson's *nigriceps* (hereby restricted to central Nepal, with wing measurements of 88-98. In eastern Nepal, presumably east of the Arun Kosi River, Sikkim and east to the Dafia Hills there is a still darker bird, the back tinged with 'clove brown'. This is *capistrata*, of which *baileyi* Kinnear (1939) is a synonym.

Heterophasia capistrata capistrata (Vigors): Black-capped Sibia.

A common bird from about 7,000 ft. up in eastern Nepal wherever there were any remnants of forest. Call and habits exactly the same as in *nigriceps*. A series measure: wing 87.5-98, one 100.

Subfamily SYLVIINAE

Seicercus burkii burkii (Burton): Black-browed Flycatcher-warbler.

Common from the Terai up to 6,000 ft. in all parts of Nepal. Western birds are slightly paler, less olive-tinted on the upper parts, thus showing the beginning of a cline towards *whistleri* of the western Himalayas. This series measures: wing ♂ 55-61, 53-56.

Seicercus xanthoschistos xanthoschistos (Gray): Gray-headed Flycatcher-warbler.

This little warbler seemed to be the most common resident species in the Valley. Males were in breeding condition in April. Wintering birds in west Nepal were taken as low as 950 ft. These specimens measure: wing ♂ 51.5-58, ♀ 48.5-53.5.

Seicercus castaniceps castaniceps (Blyth): Chestnut-headed Flycatcher-warbler.

This species seemed uncommon. Only two females were secured at the Chandragiri Pass in April and in the eastern Terai in February. The April bird is moulting. The other specimen has a wing measurement of 53. A species of thick forest, usually fairly high up in the substage or canopy.

Abroscopus schisticeps schisticeps (Hodgson): Black-faced Flycatcher-warbler.

A forest species met with only at Chandragiri Pass in May.

Phylloscopus affinis (Tickell): Tickell's Willow-warbler.

Collected in the Valley in scrub jungle at Thankote, Gokarna and Naggerjung in April, in the eastern Nepal Terai at Dharan Bazaar in January, and in the west at Rekcha in December. A male in breeding condition was taken in early April. Males measure: wing 59,60, females 55-58. The size, the color of the lower mandible and the greenish yellow underparts are diagnostic for this species.

Phylloscopus subaffinis arcanus Ripley: Western Buff-bellied Willow-warbler.

The discovery of this new subspecies of the Buff-bellied Willow-warbler has been one of the most interesting features of the Nepal Expedition. It extends the wintering range of the species west for seven hundred and fifty miles. This race is characterized by being paler, less saturated with olive-brown or fulvous. In addition the tail is longer, absolutely and in proportion, and the bill is longer. Three females taken at Tikapur and on Naggerjung measure: wing 51-55, tail 51.5-54, tail-wing index 93-103%, bill (from skull) 12-13.

The birds taken at Tikapur were in low scrubby bushes (*Zizyphus*) on sandy islands in the Karnali River. They were secretive and shy making only a single wren-like 'tick' call. Here they were associated with *Cettia brunneifrons* and *Timalia pileata* in a situation close to the ground which seemed to me very unphylloscopine. Soft parts: iris brown; bill brownish-horn, base of lower mandible flesh-colored; legs pale brown.

This species is similar to Tickell's Willow-warbler, but somewhat smaller, more buffy-yellow below and with a short second primary and darker lower surface of the bill.

Phylloscopus fuscatus fuscatus (Blyth): Siberian Dusky Willow-warbler.

A single female was taken in January at Biratnagar in a small patch of trees a mile or two from the town. Wing 57.5.

Phylloscopus pulcher pulcher Blyth: Nepal Orange-barred Willow-warbler.

This subspecies was found by us in east Nepal. As Blyth's name, *pulcher*, was given in 1845, to a Hodgson skin, and as many of Hodgson's specimens of this period came from east Nepal or Sikkim, I should like to restrict the type locality of this, the nominate race of the species to Ilam district, east Nepal.

Birds from Sikkim, Assam, N. Burma and the Chin Hills all agree with my east Nepal specimens in being dark on the upper surface. The subspecies probably extends as far west as the Arun Kosi River. These birds were taken at Mangalbaré in rhododendrons and conifers down to 8,000 ft. in February. Wing ♂ 60-61.5, ♀ 59-63.5.

Phylloscopus pulcher erochroa (Gray): Katmandu Orange-barred Willow-warbler.

Gray's name (1846) may be revived for this form, and I hereby restrict the type locality to Chandragiri Pass, central Nepal Valley. This is a paler and possibly a slightly smaller bird than true *pulcher*. A pair in fresh winter plumage from Godaveri and the Chandragiri Pass measure: wing ♂ 55, ♀ 54.

Phylloscopus pulcher erochroa \leq **kangrae**

Birds from west Nepal, taken at Rekcha in thick evergreen forest are intermediate between *erochroa* and the more western *kangrae*. In color these birds closely approach the latter but are somewhat more olive, less brownish-olive on the back, and a trace darker on the head.

Phylloscopus inornatus humei (Brooks): Green Willow-warbler.

Found on passage from the edge of the Terai up to the Valley in central Nepal in late April, and again in mid-November.

Phylloscopus proregulus chloronotus (Gray): Himalayan Willow-warbler.

The type locality of this form is Nepal, and as two populations occur within the Kingdom, I hereby restrict the type locality of this subspecies to the Central Valley of Katmandu. Specimens were collected at Naggerjung and Godaveri in November in scrub and light forest. We also found *chloronotus* at Chainpur in east Nepal. Call, a soft *sip, sip*.

The name *newtoni* Gaëtke (Darjeeling), is available for the darker eastern form of Sikkim and Assam.

Phylloscopus proregulus simlaensis Ticehurst: Western Himalayan Willow-warbler.

We collected this paler, brighter subspecies at Chisapani and Rekcha in west Nepal in light forest in December.

Phylloscopus maculipennis maculipennis Blyth: Gray-faced Willow-warbler.

Birds from east Nepal agree with birds from Sikkim and the Assam Hills. Therefore in my description of the following form (1950) I fixed the type locality of this nominate subspecies as Ilam district, east Nepal. Specimens were taken at Mangalbaré in February in thick forest.

Phylloscopus maculipennis centralis Ripley: Nepal Gray-faced Willow-warbler.

Central and western Nepal Gray-faced Willow-warblers are distinctly intermediate between the dark *maculipennis* and Ticehurst's

virens of the Punjab Himalayas, which is a much paler bird. Found in secondary scrub-forest from 5-6,000 ft. in November and December.

Phylloscopus trochiloides trochiloides (Sundevall) : Blyth's Crowned Willow-warbler.

This species was not found by us in breeding condition in Nepal. A wintering female was taken at Chatra; wing 60; third primary just shorter than fourth and fifth, but longer than sixth (Ticehurst's Key, 1938).

Phylloscopus trochiloides viridanus Blyth : Western Crowned Willow-warbler.

This species as a wintering resident, seemed to be one of the commonest Willow-warblers in Nepal in the Central area from the Terai up to 6,000 ft. It was also secured at Chatra in February. In the field and in its calls and behavior it seems indistinguishable from the Green Willow-warbler. In numbers both species seem to be equally numerous judged from the specimens collected by us.

Phylloscopus nitidus Blyth : Green Willow-warbler.

A pair of non-breeding birds were taken at Thankote in mid-April in light scrub on the hill-side near the ropeway.

Phylloscopus reguloides reguloides (Blyth) : Crowned Willow-warbler.

This species was found in the western Terai in December and on Chandragiri Pass in December and April. In the eastern Terai we collected it in January. It is a species of fairly thick forest. A Chatra female has a wing measurement of 57.5. No birds collected by us showed a tendency towards enlarged gonads.

Orthotomus sutorius patia Hodgson : Nepal Tailor-bird.

Specimens of the Tailor-bird were collected at all seasons from the Terai to 6,000 ft. Males coming into breeding condition were taken in late February in east Nepal, and in April in the Central Valley. Birds from east Nepal in fresh plumage seem slightly more richly colored on the head and lower parts than do those from farther west, indicating a cline in color towards *luteus* from extreme northeastern Assam. This difference is slight, but it would seem wise to restrict the type locality of *patia* to Katmandu.

Soft parts: iris brown, light brown, light orange-brown; bill, upper mandible black, lower flesh, light horn, (once whitish-purple!); legs brownish-flesh. In the race *guzurata* from S. India, soft parts are given by us as: iris yellow-ochre; bill, upper mandible brown, lower dark flesh; legs dark flesh; indicating differences in the colors of the soft parts between the races.

Prinia hodgsonii rufula Godwin-Austen : Himalayan Gray-breasted Wren-warbler.

This was the commonest warbler in west Nepal from the Terai up to 5,000 ft. In central and eastern Nepal it seemed less common, although it was found in the Valley, and in the east, from the Terai

up to 1,200 ft. Moulting birds were collected in March and breeding males in summer plumage were secured at Bhimpedi and Sisagarhi in May. Soft parts: iris reddish-brown, brownish-yellow; eyelid pinkish-yellow, dull yellow, bill black; legs brownish-flesh.

In west Nepal, we came across large wintering flocks numbering scores of individuals, working through tall weeds and grass on the forest edges or in clearings, constantly chittering and calling to each other. Only rarely did they leave the substage and ascend into the lower second-storey of the trees in the light under canopy of the forest.

***Prinia inornata terricolor* (Hume):** Northern Indian Wren-warbler.

The only specimen of the Indian Wren-warbler taken by us was at Kauriala Ghat on the U. P.—Nepal border in west Nepal. It appears to belong to the race *terricolor* which may thus be presumed to enter western Nepal, see Whistler and Kinnear (op. cit., 1933, p. 577).

***Prinia sylvatica gangetica* (Blyth):** Jungle Wren-warbler.

Found only in the west Nepal Terai in tall grass near the river banks. A shy skulking species. Soft parts: iris light brown; bill, upper mandible black, lower flesh, yellowish; legs brownish-flesh, flesh. A topotype of the nominate race from Segur Ghat in the Nilgiris has the lower mandible gray basally, and black distally, a possible racial difference.

***Prinia socialis inglisi* Whistler & Kinnear:** Inglis's Wren-warbler.

A single specimen of this saturated form was found in extreme west Nepal at Tikapur, where *stewarti* might more likely be expected to occur. This extends the range of this race five hundred miles to the west, presumably throughout the Nepal lowlands. Soft parts: iris pale brown; bill black; legs pinkish flesh. Wing 48.

***Prinia polychroa crinigera* (Hodgson):** Nepalese Hill-warbler.

Found on scrub-grown hillsides from above the Terai at just over 1,000 to 5,000 ft. A breeding male in summer plumage was obtained at Bhimpedi in Many. Soft parts: iris pale brown; bill, upper mandible black, lower light horn; legs brownish-flesh; nails black.

Wing ♂ 51-54 (winter), 61.5 (summer); tail ♂ 106-114 (winter), 114 (summer).

***Tesia cyaniventer* Hodgson:** Slaty-bellied Wren

Tesia olivea was not collected by us in Nepal. All specimens of Wren-warbler taken by us from 500-6,000 ft. in the three areas visited have the crown concolorous with the back, the lower mandible varying from yellow to dull orange, and the light gray underparts identifying them as *cyaniventer*. The alarm call of this species is a sharp characteristic *tchirik* identical with that of *olivea*. We found the bird on or near the ground in clumps of fallen brush in evergreen jungle from the Terai up to Chandragiri Pass.

***Tesia castaneo-coronata* (Burton):** Chestnut-headed Wren.

Seen only at Chandragiri Pass and on Naggerjung. I found these birds in scrub bushes (mostly *Strobilanthes*) on overgrown hill-sides.

The alarm note was a single distinctive *wee* repeated at intervals of several seconds. Soft parts: iris brown; bill, upper mandible black, lower orange at base, black tip; legs olive-brown. Wing ♂ 48.5-50, ♀ 46.5.

Cettia pallidipes pallidipes (Blanford); Blanford's Bush-warbler.

A single female taken in thick brush at Chisapani, western Nepal, on December 18 is a considerable westward extension of this species. It is presumably the first record west of Sikkim. I found the bird very difficult to see in dense grass and bushes in a scrub area away from the typical evergreen Terai jungle. Wing 57.5

Cettia brunneifrons brunneifrons (Hodgson): Rufous-capped Bush-warbler.

Two specimens of this skulking Bush-warbler were taken; in the Valley in April at 6,500 ft. and in the Terai at Tikapur in January. The second specimen, collected by Mr. Migdalski was without a tail, and for a time I was very perplexed to identify it, as it seemed to be an unknown brown-headed *Tesia*! Found in very thick shrubbery in the open. Wing; ♀ 43, ♀ 43.

Acrocephalus dumetorum Blyth: Blyth's Reed-warbler.

Found at Bhimpedi and Godaveri in April and May. The skulking habits of this bird tempt the collector invariably. Each time it turns out to be the same migrant species again, rather than some hoped-for rarity.

Phragmaticola aëdon (Pallas): Thick-billed Warbler.

I collected a single bird in light bushes on the edge of tall grass at Chatra while following up a tiger track. It was quite silent, unsuspicious and allowed a close approach. Wing ♂ 79.5.

Subfamily MUSCICAPINAE

Muscicapa latirostris latirostris Raffles: Continental Gray-breasted Flycatcher.

Two males and a female were taken at Katmandu in April. One male had slightly enlarged gonads.

Muscicapa sibirica cacabata Penard: Nepal Sooty Flycatcher.

This species appeared in the Valley at the end of April, and was collected there on the forest edge at Gokarna and Godaveri. It sits silently on the top of tall trees in the open, occasionally hawking after insects.

Muscicapa strophinata strophinata (Hodgson): Orange-gorgetted Flycatcher.

A bird of passage not found in the Valley except in winter in late November. We collected it also in east and west Nepal from the Terai to 5,000 ft. from December through February.

Muscicapa parva albicilla Pallas: Eastern Red-breasted Flycatcher.

I am inclined to include all the Red-breasted Flycatchers collected by us in Nepal in this race. Specimens were taken in the Terai from November to February, and in the Valley in April. The commonest wintering flycatcher, found on the edges of towns and in cultivated areas.

Muscicapa leucomelanura leucomelanura (Hodgson): Slaty-blue Flycatcher.

Collected by us only in west Nepal and at Naggerjung. In the west we found it both in the Terai, and on up to 5,000 ft. in December and January, and at Naggerjung in April. No breeding specimens were taken.

Muscicapa superciliaris astigma Hodgson: Little Blue and White Flycatcher.

A pair were taken at Chandragiri Pass in late April. Wing ♂ 64, ♀ 60. The male has a trace of a white supercilium.

Muscicapa hyperythra hyperythra Blyth: Rufous-breasted Blue Flycatcher.

The Rufous-breasted Blue Flycatcher is a rather shy species, found usually as a single bird in a dense thicket in primary forest. I have never heard them utter a syllable. I have not found them high up, nor were any of our specimens in breeding condition. We collected these flycatchers in the Terai in December and February, and in the Valley in April at 6,225 ft. A male from west Nepal in fresh plumage is paler on the breast and larger (wing 63), than a small series from central and eastern Nepal and Assam (wing 57.5-61.5).

Muscicapa thalassina thalassina Swainson: Verditer Flycatcher.

This delicately colored flycatcher was the commonest breeding bird at Gokarna and Naggerjung in April. They keep much to light forest, and present-day conditions at the Preserves seem to suit them very well. Males and females in breeding condition were taken all through the month.

Muscicapa hodgsoni (Moore): Pigmy Blue Flycatcher.

A single male was shot at Godaveri on November 27. The bird was in a dense thicket in secondary scrub in similar facies to that selected by *M. hyperythra*. Wing 51. Soft parts: iris brown; bill brown; legs bluish-gray.

Muscicapa sapphira (Tickell): Sapphire-headed Flycatcher.

A female, rather badly mutilated, is our only record of this species, and the second record for eastern Nepal. It was collected at Chatra in late February in a thicket in forest. Wing 57.

Muscicapa rubeculoides rubeculoides (Vigors): Blue-throated Flycatcher.

The Blue-throated Flycatcher was breeding in the Valley along with the Verditer in late April in the same localities, Gokarna and

Naggarjung. It was also collected at Bhimpedi in May. Both species seem to enjoy the same habitat. A series measure: wing ♂ 71.5-76, ♀ 71.5-73.

Muscicapa olivaceus poliogenys (Brooks): Brooks's Flycatcher.

Brooks's Flycatcher was found at Chatra in February, a westward extension of range into Nepal, from which it had not been previously recorded. The series measures: wing ♂ 73, ♀ 71-72.5. These birds seem slightly paler on the throat than birds in similar plumage from the Khasia Hills. One female recorded as having slightly enlarged ovaries on February 10.

Niltava grandis grandis (Blyth): Large Niltava.

Uncommon. Found only on Chandragiri Pass in May. A male measures: wing 110.

Niltava sundara sundara Hodgson: Rufous-bellied Niltava.

Found at Rekcha and on Chandragiri in December and April. Uncommon and resident.

Niltava macgrigoriae (Burton): Small Niltava.

The Small Niltava occurred at Godaveri where males were in breeding condition the end of April. A wintering bird was taken at Tikapur in January.

Culicicapa ceylonensis calochrysea Oberholser: Himalayan Gray-headed Flycatcher.

The common Gray-headed Flycatcher was breeding in the Valley in April at Gokarna and in patches of trees in the outskirts of Katmandu. In winter we found it in the western and eastern Terai in evergreen forest. For nomenclature of this species see Deignan (1947).

Terpsiphone paradisea leucogaster (Swainson): Himalayan Paradise Flycatcher.

A breeding species in Katmandu, the Paradise Flycatcher arrives usually in late March or early April. It nests commonly in bushes in some of the larger gardens around the city. Proud (op. cit. p. 705.) has a comprehensive description of nests observed by her.

Rhipidura hypoxantha Blyth: Yellow-bellied Fantail Flycatcher.

The little Yellow Fantail is found in the Valley in winter on Naggarjung, and right down to the forests of the Terai in the west. We did not collect it in the Valley in April, so that presumably it leaves earlier. Wing ♂ 56-58, ♀ 54-57. Found in tall trees, in the sub-canopy of the forest, in parkland or open woods.

Rhipidura aureola aureola Lesson: White-browed Fantail Flycatcher.

We found the White-browed Fantail only in the Terai evergreen forests in the west, where it was associated with *albicollis*. Its song is distinctive and melodic, but too short. It should go on and on but never does.

Rhipidura albicollis albicollis (Vieillot): White-throated Fantail Flycatcher.

Common in the western Terai but now rare in the Valley. This is a forest species and we did not find it except near Bhimpedi where a young bird was collected in the first week of May. A breeding male was taken in February at Muhlgat on the Tamur River.

PARIDAE

Parus major nipalensis Hodgson: Nepal Gray Tit.

A common species in the Terai from west to east, and up into the 'duns' and lower valleys. This cheery little bird is always very noticeable wherever it occurs, usually in light forest. Fourteen specimens have wing measurements of 59.5-70, and the area of white on the penultimate tail feather ranges from 22-40 mm. (aver. 31.8).

Parus monticolus Vigors: Green-backed Tit.

This hill species was seen from about 4,500 ft. along the Markhu Valley up to 9,000 ft. March specimens, which are in rather worn, dull plumage, were in breeding condition. I have seen this bird in a variety of localities from open scrub to fairly heavy evergreen jungle. Males and females measure: wing 65.5-69.5.

Parus rubiventris beavani (Blyth): Sikkim Black Tit.

A single male was taken at Mangalbaré perched in the open on top of a low tree, calling loudly in typical tit language. In size and color this specimen matches topotypes from Sikkim exactly. Wing 69, tail 45, bill, from skull 12.5. Stevens (op. cit. p. 725.) had previously recorded this Black Tit from the Nepal-Sikkim frontier.

Parus modestus modestus (Burton): Yellow-browed Tit.

The Yellow-browed Tit was found from 6,200 ft. in the Valley to nearly 9,000 ft. in the Mangalbaré area. We found them in large mixed flocks with the small Red-headed or Rufous-fronted Tits in heavy rhododendron or evergreen jungle. The birds moved rapidly and busily, hard as always to observe for any period of time. The yellow eyebrow becomes much paler in worn plumage. Wing ♂ 58.5-62, ♀ 54-60.

Parus xanthogenys xanthogenys Vigors: Northern Yellow-cheeked Tit.

Found throughout Nepal from west to east, from under 1,000 to over 6,000 ft. The commonest tit of the Valley we found these birds breeding in February, March and April. Specimens measure: wing ♂ ♂ and ♀ ♀ 64-72.5.

Aegithaliscus concinnus rubricapillus Ticehurst: Sikkim Red-headed Tit.

All Nepal birds seem to belong to this race. Although common enough in the hill round the Katmandu Valley from 5-6,000 ft., it was only once seen and collected at Rekcha, and not found by us in eastern Nepal, possibly because conditions at that altitude are now

so poor for birds due to deforestation and erosion. Soft parts: iris yellowish-white, legs dull orange-brown, tan. Wing; ♂ 50-53, ♀ 48-51.

Aegithaliscus ioschistos (Hodgson): Rufous-fronted Tit.

A single male was shot out of a flock in dense evergreen cover at Mangalbaré. Soft parts: iris yellow; legs orange-brown. wing 56. I am inclined to think that this is an eastern species which will probably only be found east of the Arun Kosi River.

Melanochlora sultanea sultanea (Hodgson): Sultan Tit.

Observed by us only once in Nepal at Chatra in light forest along the river bank. A male has a wing measurement of 114.

SITTIDAE

Sitta himalayensis Jardine & Selby: White-tailed Nuthatch.

A single female taken at Chitré in evergreen forest has a wing measurement of 74.

Sitta castanea cinnamoventris Blyth: Cinnamon-bellied Nuthatch.

The commonest nuthatch of the jungle-covered Terai during winter, and at all seasons up to 6,000 ft. Males in breeding condition were taken in April in wooded areas in the Valley. A series measure: wing ♂ ♂ and ♀ ♀ 79.5-84. Soft parts: iris brown, bill black, base of lower mandible bluish-gray, whitish-gray; legs brown.

Sitta castanea castanea Lesson: Chestnut-bellied Nuthatch.

It was a surprise to find the plains form of *castanea* in the Terai jungle within four miles of where we took the preceding race. However, *cinnamoventris* is only a winter migrant into the area. Two males from Belchola and Birganj measure: wing 72, 73. Soft parts: iris brown, dark brown; bill, upper mandible black, lower gray at base; legs dark brown, dark slaty-brown.

Sitta frontalis coralina Hodgson: Velvet-fronted Nuthatch.

Common in the Nepal Valley around Katmandu and into the hills to 6,000 ft. Elsewhere we found it only in the wooded parts of the Terai. The majority of birds collected were females, only four out of thirteen specimens being males. Males and females were in breeding condition in April.

CERTHIIDAE

Certhia himalayana infima Ripley: Dark Himalayan Tree-creeper.

Kinnear (1937) states that the 'Fauna' (1922) is mistaken in assigning the range Nepal to this bird. Actually it is of course a western Himalayan species and we found it only at Tikapur and Chisapani in the western Terai where wintering birds were collected in December and January in forest. This is then the first valid record of the species from Nepal, and the specimens taken proved to belong to an undescribed dark subspecies noticeably darker, more blackish above than *h. himalayana* from Simla and southern Kashmir. These birds are marked on the head, nape and upper back with sharply defined narrow

streaks of buffy white, in far sharper contrast than the typical form because of the basal color of the feathers. In addition the barring on the tail is darker, more distinct and more blackish.

A male and two females have wing measurements of ♂ 64, ♀ 67, 68.

***Certhia familiaris mandelli* Brooks** : Nepal Tree-creeper.

This species was found at Mangalbaré in rhododendron forest. Three females measure: wing 63-65. For the name see Kinnear (1935). Soft parts: iris brown; bill, upper mandible black, lower pinkish-white; legs brown. I am inclined to think this is an eastern form, found in Nepal only as far west as the Arun Kosi.

***Certhia discolor discolor* Blyth** : Sikkim Tree-creeper.

Three females were collected at Godaveri in open forest where it apparently winters, as it had not been found there in spring. This is probably the species seen by Proud (op. cit. P. 701.) on Sheopuri and Phulchok. These birds measure: wing 66-68, culmen 15-16.

***Certhia nipalensis* Blyth** : Blyth's Tree-creeper.

A single female of this species (formerly called *stoliczkae*), was taken at Mangalbaré in dense rhododendron forest. Wing 69.5, tail 71.5, culmen 12.5. Soft parts: iris brown; bill, upper mandible black, lower pinkish-white; legs brown. The species has not been recorded from Nepal except for a single Hodgson specimen cited by Kinnear (op. cit. 1937). I imagine it is an eastern bird found only as far west as the Arun Kosi.

***Tichodroma muraria* (Linnaeus)** : Wall-creeper.

A single bird was observed on an open rock cliff at 6,500 ft. in east Nepal in February.

DICAETIDAE

***Dicaeum ignipectus ignipectus* Blyth** : Fire-breasted Flowerpecker.

This flowerpecker was found from 6-9,000 ft. Males in breeding condition were collected in February and April. One male was caught in a bird net in a clearing in cut-over scrub. Soft parts: iris brown; bill black, base of lower mandible whitish (♂), orange-flesh (♀); legs dark brown, black.

***Dicaeum concolor olivaceum* Walden** : Plain-colored Flowerpecker.

Found in the Valley, breeding in mid-April on Naggerjung. These birds measure: wing ♂ 45.5-48.5, ♀ 45. Perhaps the reason for our collecting only one female is the chance that they call less frequently.

***Dicaeum erythrorhynchum erythrorhynchum* (Latham)** : Tickell's

Flowerpecker.

A flowerpecker of the Terai found in west and central Nepal, mostly in open scrub, often near cultivation. A breeding male was collected in January at Tikapur.

Dicaeum agile agile Tickell: Thick-billed Flowerpecker.

A bird of the Terai and 'duns', found commonly in east Nepal up to 2,500 ft. in flowering bushes in open scrub. Wing ♂ 64, ♀ 58-60.

NECTARINIIDAE

Anthreptes singalensis assamensis Kloss: Indian Ruby-cheek.

A single male Ruby-cheek taken at Chatra is a westward extension into Nepal for this species. Wing 55.5, culmen 14. Soft parts: iris red; legs greenish-gray.

Nectarinia asiatica asiatica (Latham): Indian Purple Sunbird.

Birds of this species were taken in the 'duns' at Bhimpedi and on the Tamur River at from 1,200-4,500 ft. Breeding males were collected in February and May.

Aethopyga nipalensis nipalensis (Hodgson): Nepal Yellow-backed Sunbird.

Yellow-backed Sunbirds were shot at Rekcha and near Chandra-giri Pass. These specimens measure: wing ♂ 53 (2), 54, ♀ 49-51; culmen ♂ 18-20, ♀ 17-18. These birds are found in thick bushes on the forest edge.

Aethopyga nipalensis koelzi Ripley: Koelz's Yellow-backed Sunbird.

Birds from Mangalbaré are larger, wing ♂ 54-55.5, culmen ♂ 20-21.5, than specimens from farther west. As I remarked in my description of this race (1948a) in the case of Sikkim birds, they are somewhat intermediate in size, but should be put in with Assam specimens. In addition, these Mangalbaré males are richly streaked with scarlet on the breast, a condition which my Mishmi birds showed, but which I hesitated to use as a character for the subspecies. In series however, this character shows up well, serving to distinguish east Nepal birds at a glance from those from central and western Nepal.

Aethopyga saturata saturata (Hodgson): Black-breasted Sunbird.

A single female was collected at Gokarna. It measures: wing 49, culmen 19.

Aethopyga siparaja seheriae (Tickell): Indian Scarlet-backed Sunbird.

The Scarlet-backed Sunbird was collected in western and central Nepal from the Terai up to 6,000 ft. on Naggerjung. Birds were evidently breeding in March and April and specimens with head moult were taken in April. A series have measurements as follows: wing ♂ 56-58, ♀ 50.5, 53; culmen ♂ 19.5-20.5, ♀ 18 (2).

Aethopyga ignicauda ignicauda (Hodgson): Fire-tailed Yellow-backed Sunbird.

The Fire-tailed Sunbird was collected on a ridge at Powah above Dhankuta at 5,000 ft., at Chitré and on Chandragiri Pass. All of the males are in eclipse plumage, and all are in various stages of moult in January and February. Males measure: wing 57-58, ♀ 53-54; culmen ♂ ♂ and ♀ ♀ 18-19.

ZOSTEROPIDAE

Zosterops palpebrosa palpebrosa (Temminck): Indian White-eye.

Syn: *Zosterops palpebrosa occidentalis* Ticehurst

Zosterops palpebrosa elwesi Baker

A large series of males and females from Nepal have wing measurements of 51-56. Ticehurst (1927) redescribed the northern Indian White-eye in an extraordinarily offhand way. Earlier Baker (1922) had revised some of the Oriental *Zosteropidae*, restricting the type locality of *Zosterops palpebrosa palpebrosa* to Orissa. He then separated the northern and western Indian population as *elwesi* on the basis of brighter yellow upper parts, paler under parts, and smaller size. His type locality was given as Sikkim. Ticehurst (op. cit.) revised this range to exclude Sikkim, and renamed the population, noting that it is larger not smaller than typical *palpebrosa*, but otherwise is paler and more yellow as Baker had pointed out.

Fortunately all these birds appear similar above and below, there being a certain amount of individual variation in the shade of greenish-yellow or yellowish-green, particularly on the upper parts. I would, therefore, include them all with *palpebrosa*, thus agreeing with Stresemann (1939). It is perhaps inappropriate to comment on the above nomenclatorial whirligig, but I can hardly refrain from dubbing Ticehurst's act irresponsible. It is quite clear from Baker's paper what he was trying to get at, and it is also fairly apparent from the material when Nepal specimens are included, as they should have been by Ticehurst, that Sikkim birds fit in with those from farther west.

As for measurements, they show little difference between the two populations. For *p. palpebrosa* we have: wing ♂♂ and ♀♀ 49-57 mm. (Baker's, Ticehurst's and mine), and for '*elwesi*' (including '*occidentalis*') ♂♂ and ♀♀ 49-59 mm. (Baker's, Ticehurst's and mine).

FRINGILLIDAE

Carduelis spinoides spinoides Vigors: Himalayan Greenfinch.

Two females of the Greenfinch were shot in the Valley in April and May. They measure: wing 77, 78, and are in rather worn plumage, although the May bird is half moulted.

Leucosticte nemoricola nemoricola (Hodgson): Hodgson's Mountain Finch.

Two males collected at Tinjure and Mangalbaré measure: wing 101.5, 103.5. Two females have wing measurements of 94 and 99. Soft parts: iris light brown; bill brown, brownish-yellow at base; legs brown.

Carpodacus erythrinus roseatus (Hodgson): Common Indian Rosefinch.

A male collected at Rekcha January 1 has been identified for me by Dr. Vaurie as belonging to this race. For comments on this species, see Vaurie (1949). In Rekcha, females were present in large flocks on our arrival in December. They were mostly feeding on weed

seeds on open scrub hillsides. Males did not appear until January 1 when I shot two birds out of a small group of males in one tree. One of these birds was the specimen mentioned above. Wing 86.5.

Carpodacus erythrinus kubanensis Laubmann : Caucasian Rosefinch.

The other male shot out of the same tree at Rekcha as the preceding subspecies has been tentatively identified as belonging to this race by Vaurie.

Carpodacus erythrinus erythrinus (Pallas) : Russian Rosefinch.

The females taken by me at Rekcha and in the Valley have been identified by Vaurie as being of the *erythrinus* type, and certainly not *roseatus*. The above birds actually lie somewhere near those described in his paper (op. cit., p. 44) as '*erythrinus* subspecies'. The occurrence of these three forms all together and even arriving together and perching in the same tree, highlights the complex situation with these Rosefinches, and the depth of our ignorance about the question of the actual breeding populations of the higher central Himalayas.

Carpodacus nipalensis nipalensis (Hodgson) : Nepal Dark Rosefinch.

Dr. Vaurie has kindly examined my specimens of this species and finds that a male from Godaveri taken in December seems to be true *nipalensis*, whereas a pair of birds taken at Mangalbaré in January are intermediate between *kangrae* and *intensicolor*, as indeed they should be if all three races are to be recognized.

Carpodacus thura thura Bonvalot & Schlegel : Nepal White-browed Rosefinch.

A pair from Tinjuré measure: wing 85 (2). Soft parts: iris brown; bill blackish-horn; legs brown.

Pyrrhula erythrocephala Vigors : Red-headed Bullfinch.

One or two family groups of this Bullfinch were seen at Mangalbaré in clearings in primary rhododendron forest. They were shy, flying up into the trees with a flash of the white rump and a few subdued tinkling calls, usually well out of gunshot. Two males measure: wing 79, 81.5; tail 64, 64.5. Soft parts: iris dark brown; legs brown.

Propyrrhula subhimachala subhimachala (Hodgson) : Red-headed Rosefinch.

A female was taken at 9,000 ft. at Tinjuré in pine forest (*Abies*). Wing 97.5, tail 75, culmen 14. These finches were all exceedingly shy and elusive.

Melophus lathamii (Gray) : Crested Bunting.

Specimens were collected from 3,800-5,000 ft. throughout Nepal. The species appeared to be breeding at Bhimpedi in May.

PLOCEIDAE

Passer domesticus parkini Whistler : House Sparrow.

Common in the Valley. Breeding in April.

Passer montanus malaccensis Dubois : Tree-sparrow.

Common at Thankote and Gokarna.

Lonchura striata acuticauda (Hodgson) : Hodgson's Munia.

A single male coming into breeding condition was collected at Naggerjung. Soft parts: iris reddish-brown; bill upper mandible black, lower bluish-gray; legs dark gray. Wing 54.

Lonchura punctulata lineoventer (Hodgson) : Spotted Munia.

A male was moulting April 30. A fairly common species in the Terai and the Valley about grain fields.

STURNIDAE

Gracula religiosa intermedia Hay : Indian Hill Myna.

Taken by us only in the original Terai forest and foothills near Chatra. Birds were coming into breeding condition in late February and March, and the very large flocks which were characteristic of winter, were beginning to break up.

Sturnus malabaricus malabaricus (Gmelin) ; Gray-headed Myna.

A breeding bird of the Valley, where we collected specimens with enlarged gonads at Gokarna in late April. Soft parts: iris white; bill greenish-yellow, base bluish-gray; legs dull fleshy-brown.

Sturnus contra contra Linnaeus : Indian Pied Myna.

Common throughout the Terai in gardens and near cultivation.

Acridotheres tristis tristis Linnaeus : Common Myna.

Collected in the Valley and at Rekcha. Seen also throughout Nepal up to 6,000 ft. near cultivation. Soft parts: iris light brown or gray, spotted with white; bill yellow, skin of cheeks orange yellow; legs yellow. A male was assuming breeding condition in mid-April.

Acridotheres grandis fuscus (Wagler) : Northern Jungle Myna.

Associated with the Common Myna in the Valley. Soft parts: iris yellow; bill, upper mandible yellowish-orange, lower yellowish-orange distally, black basally; legs yellow-ochre.

DICRURIDAE

Dicrurus macrocercus albirictus (Hodgson) : King Crow.

The King Crow was the common drongo of the open Terai near cultivation, and in the Valley in the open fields. An immature specimen was taken at 4,000 ft. on the edge of a paddyfield February 9 in east Nepal. Wing ad. ♂ 154, ♀ 145-148.5. These measurements